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ABSTRACT

This document, the 10th in a series distributed annualy to provide a central source of timely information and materials on the management and operations of large academic and research libraries, presents the results of a 1984 Systems and Procedures Exchange Center (SPEC) survey of microcomputer use in the Association of Research Libraries (ARI) member libraries and related unedited primary source documents. Whereas a 1982 survey found that less than half the respondents were using micros, in the current survey, 69 of the 85 respondents (81%) report microcomputer applications. The survey indicates that while interest in technical aspects of microcomputers has not abated, some management issues have surfaced, e.g., training staff to use micros; developing policies and practices for their use; and overseeing their selection, deployment, and maintenance. In addition to the results of the SPEC survey, this kit contains six planning and specifications documents, four examples of policies and procedures, and five samples of training and personnel materials. Eight of these documents emphasize the use of microcomputers for word processing applications. (DMC)

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#104, May 1984

OMS

Systems and Procedures Exchange Center

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MICROCOMPUTERS IN ARL LIBRARIES

As equipment prices fall, system capabilities increase, and more sophisticated software becomes available, libraries are using microcomputers to perform a variety of tasks and expanding their applications. While interest in technical aspects of microcomputers has not abated, management issues have surfaced: training staff to use micros, developing policies and practices for their use, and overseeing their selection, deployment, and maintenance.

In January 1984, SPEC surveyed microcomputer use in ARL member libraries. Whereas a 1982 survey found that less than half the respondents were using micros, in the current survey, 69 of the 85 respondents (81%) report microcomputer applications. Just over half of the libraries have between one and five small computers; an additional 20 have between six and ten, and the remaining 13 libraries report ten or more.

POLICIES AND PROCEDURES. Microcomputer prices are low enough to make their purchase by departments or units possible, but if they are acquired and used without central guidance, libraries face the problem of incompatibility. Some libraries have found it advantageous to designate one staff member to coordinate the purchase and use of microcomputers. While only nine libraries report policies for staff microcomputer use, policy issues are becoming more critical as purchases increase. Of primary importance are guidelines for selecting micros that meet library needs.

Among respondents to the SPEC survey, compatibility was the most frequently mentioned criterion for system choice. Sometimes, the choice is dictated by the need for compatibility with existing university or library mainframe computers, or with circulation or other automated systems. Because not all computer programs can be transferred among machines, library-wide standarization is desirable even in the absence of other considerations. By limiting the variety of micros, libraries can more easily provide training and support.

Other issues addressed in library policies include definition of tasks appropriate for micros, communication among micros, communication with outside systems, control of and responsibility for the data generated, placement of machines, conditions of access, security, and training and authorization for use.

FUNDING. Budgets for microcomputer purchases should include initial hardware and software costs, furniture costs, site preparation costs, data transfer expenses, if any, and ongoing costs, including maintenance and supplies. Most libraries budget their microcomputer purchases in the equipment category, and some institutions place purchases of software and other items in a general supplies budget. Among respondents to the SPEC survey, the average planned cost per computer is $5280.

Some libraries have diverted funds intended for other types of equipment for microcomputer purchases, especially where other terminals can be replaced by micros. Other have found support within acquisitions budgets for computers to access online sources. Requests for special funding from the university may be successful, especially where an information system for the campus is being built. Donations from manufacturers and discounts for bulk purchases are other alternatives libraries and universities have pursued.

TRAINING. Libraries are finding that microcomputers can help productivity, but that training is a major key. Training many staff on few machines and providing instruction to all who want and need it are frequent concerns. Three-fourths of the respondents to the SPEC survey operate staff training programs. The primary resources for training are peer instruction and self-instruction with

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manuals, although 21 libraries report using outside trainers. Some libraries have asked a few staff to be trained by vendors, and these individuals then work with the rest of the staff. Although the issue of continuing education for micro use was not noted as a major concern, changes in software and computer technology imply a need for ongoing training.

APPLICATIONS. Management functions have benefited most to date because of the availability of software. Administrative uses include word processing, financial analysis, accounting, personnel records, mailing lists, scheduling, and electronic mail. Small computers are very effective when employed for performing a single task repeatedly, and many managers specify that initial applications be limited to tasks suited to quick and productive implementation.

In public services, most respondents use micros for bibliographic searching and for maintenance of lists and files. Other public services applications include scheduling, reserve book services, indexing newspapers, individual professional work, brochures, lists and guides to collections, and bibliographic instruction. Technical services departments use micros most often for acquisitions work, with serials control and online cataloging second and third. Other technical services micros are employed for accounting, labels, cards, individual professional work, retrospective conversion, statistics, authority work, and union lists of serials.

Twenty-four libraries report microcomputer facilities for users. Students, faculty, and others can use library computers for individual learning, to access library databases, or for other needs such as preparation of papers and reports. No library reported circulating micros for home use. Seven report their use for accessing online catalogs.

ISSUES AND TRENDS. Within the library, control and monitoring of micros, including their locations and the tasks they perform, will require new policies. As the versatility of micros increases and as staff discover new ways to use them, demand is likely to exceed what the budget will allow. More departments and units are funding valid justifications for use of micros and administrators are faced with difficult decisions concerning how to allocate them.

Public services departments will be affected as more personal computer users gain access to libraries' online catalogs. Requests for library materials may well increase dramatically as the library catalog becomes more accessible to university offices. Such requests from off-site users raise questions concerning delivery of materials and even more fundamentally, what constitutes library use. In addition, users' direct access to databases may change the character of this service: librarians, as expert searchers and trainers, may find users relying on them for sophisticated understanding of data bases and advanced searching techniques.

The role of research libraries in providing software -- and even machines -- for users also is of concern. To date, only a few research libraries have established centers for personal micro use. And whether software will become part of research libraries' collection responsibilities remains an unanswered question.

An important technical issue both within the library and campus-wide is compatibility. In attempting to standardize internal microcomputer systems, libraries need to take into account university policies as well as other requirements, such as communication with vendors, other libraries, and bibliographic utilities. It seems likely that research libraries may have to use several types of micros, because of the variety of work being done on them.

However, the major need for research libraries in a period of proliferation of microcomuters is assuring that these tools are used effectively for library work. This means careful selection of equipment and software, responsible policies for placement of micros and for the tasks they will perform, adequate training of staff for efficient operation, and attention to compatibility so that micros can not only serve as independent workstations, but as communications devices and shared information resources.

The SPEC kit on Microcomputers in ARL Libraries(#104, May 1984, 98 pages) contains results of the SPEC survey, six planning and specifications documents, four examples of policies and procedures, and three examples of training and personnel materials. A list of selected references also is included. SPEC kits are available mainly by subscription. Individual copies may be ordered for $15.00 (prepayment required) from: SPEC, Office of Management Studies, ARL, 1527 New Hampshire Ave., N.W., Washington, D.C. 20036. Orders outside the U.S. and Canada, add $5.00 per order for parcel postage and handling.

USES OF SPEC KITS

The Systems and Procedures Exchange Center (SPEC) is a clearinghouse operated by the Association of Research Libraries, Office of Management Studies that provides a central source of timely information and materials on the management and operations of large academic and research libraries. It facilitates the exchange of knowledge and documents through SPEC Kits, which are distributed ten times each year to ARL members and other interested libraries. The Kits include topically-arranged groupings of unedited primary source documents – selected for their value to administrators and decision-makers – that illustrate a wide range of alternative approaches to specfic issues.

Kit documents come from general membership surveys and from selected libraries contacted directly by SPEC, and most Kits are produced within six months of surveys. The documents' value comes from their variety of ideas, methods, and solutions. They are not viewed as finished products, but rather as points of departure for a library's planning efforts and as stimulants to innovative approaches to problem-solving. As such, Kits do not present answers or prescriptions for any one library; instead they illustrate how selected ARL members are planning for or dealing with particular issues. The worth of any one Kit to a particular library will depend upon the specific topic covered and the library's stage of development in that area.

Materials are selected according to the following criteria:

- Presents an approach of potential value to administrators and decision-makers
- Timely, and dealing directly with the topic under consideration
- Probability of application of ideas or thinking to other library situations
- Illustrative of actual practice, rather than theoretical
- Understandable, readable communication

All together, the materials should provide a range of alternative approaches that complement each other, provide variety, and stimulate comparison and contrast.

Libraries can take advantage of the Kit compilations in a number of ways. Administrators can evaluate the assumptions, methods, and results of other libraries' approaches; compare and contrast them; and use the learnings in their own situations. Library staff members can use the kits as professional development and current awareness tools. Committees and task forces can use them to begin a review of current practices. And the Kits can identify other persons or places to contact for further information. Back-up files in the SPEC office also are available for loan to member libraries. In addition, SPEC will conduct on-demand surveys or analyses geared specifically for a single library.

EVALUATION

Kit Title/Number _____

1. Which uses did the library make of this Kit?

2. Please indicate how useful the Kit was for these purposes.

☐ Very Useful ☐ Quite Useful ☐ Somewhat Useful ☐ Not Useful

3. Do you have suggestions for this Kit or for future Kits?

(optional)

NAME _____

LIBRARY _____

PHONE _____

Please return this form to the SPEC Center, OMS/ARL, 1527 New Hampshire Ave., N.W., Washington, DC 20036.

1/82

ISSN 0160 3582

MICROCOMPUTERS IN ARL LIBRARIES

SPEC Kit #104

MAY 1984

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OFFICE OF MANAGEMENT STUDIES

ASSOCIATION OF RESEARCH LIBRARIES 1527 New Hampshire Avenue, N.W., Washington, D.C. 20036 • (202) 232-8656

RESULTS OF THE SPEC SURVEY: MICROCOMPUTERS IN ARL LIBRARIES January 1984

Number of libraries providing information: 85 (73% of ARL members)
(Not all libraries answered all questions)

ADMINISTRATION AND FUNDING

Does your library use microcomputers?

Yes	69	(81%)
No	8	(9%)
Planning	8	(9%)
Total	85	

Is one person responsible for the acquisition and use of microcomputers?

Yes	28	(39%)
No	44	(61%)
Total	72	

Has anyone in the library designed software?

Yes	27	(41%)
No	39	(59%)
Total	66	

Number of microcomputers currently used in the library:

No. of computers	No. of libraries	
1-5	35	(52%)
6-10	20	(29%)
11-20	10	(15%)
20 or more	3	(4%)
Total	68	

Is there a central library policy for staff use of microcomputers?

Yes	9	(13%)
No	59	(87%)
Total	68	

List the three or four key criteria/features important to the library when deciding which microcomputer to purchase:
(The criteria and features listed are arranged in categories below)

Compatibility	
With existing software, hardware	22
With university network/existing campus computers	20
For current/potential applications	9
For connection with existing mainframes	1
With current trends in library micro use	1
Total	53
Software	
Availability of needed software	38
User friendliness/ease of use	9
Total	47
Cost	
Cost and availability of discounts	31
Support	
Availability and cost of maintenance/service	10
University computer center recommendations/support	5
Vendor's reliability and support	14
Total	29
Equipment features	
Efficiency and capacity	3
Programming language required/ operating system	3
IBM compatibility	7
Total	13

Indicate which budget item category or categories are used for purchase related to microcomputers:+

Number of budget categories reported		
One budget line	29	(55%)
Two budget lines	21	(40%)
More than two	3	(5%)
Total	53	

Categories reported by more than one library:
One budget line: Equipment (16)*; Operating budget (3)
Two budget lines: Equipment, for hardware, and Supplies, for software (10)

+For additional details on budget line data, contact SPEC

*Or some variant; e.g., computer equipment; capital equipment; non-recurring equipment

Approximately how much did the library spend on microcomputers in the last 12 months? Where possible, indicate amounts spent for categories listed below:

Approximate total: (N=61)	Range: $360 to $179,200 Median $14,015
Main units N=46	Range: $1,995 to $125,000 Median: $10,851
Printer(s) N=43	Range: $500 to $30,000 Median: $2,500
Software N=44	Range: $300 to $19,800 Median: $1,900
Modems N=21	Range: $100 to $20,000 Median: $1,000

Other:	No.	Range
Maintenance	3	$1,000 to $3,529
Supplies	15	$150 to $3,599
Hookups	1	$149
Security	2	$742 to $4,000
Furniture	3	$1,200 to $6,700
Diagnostic package	1	$217
Plotter	1	$1,403

Approximately how much is the library planning to spend on microcomputers in the next 12 months?

Approximate total: N=49	Range: $3,500 for 1 unit, to $150,000 for 32 units Median: $17,150 for 3 units. Average: $20,490 Average expected cost per unit: $5280 (N=45)

TRAINING

Does the library offer training to staff for microcomputer use?

Yes	50	69%
No	20	28%
Planning	2	3%
Total	72	

Does the library offer training to patrons for microcomputer use?

Yes	11	15%
No	60	83%
Planning	1	1%
Total	72	

If Yes, which of the following does the library use:

Type of Training	For Staff	For Patrons	Total
Outside trainers	21	1	22
In-house staff	41	11	52
Self-instruction with manuals	38	8	46
A/V aids	3	0	3
Computer-assisted instruction	19	6	25
Other: (PC user groups; university trainers)	2	0	2

AREAS OF USE

PUBLIC SERVICES

	Use	Major Use	Total
Bibliographic searching	24	7	31
Reserve lists	6	1	7
Reference questions	4	2	6
Scheduling of staff	7	0	7
Specialized list/file maintenance	25	10	35
Circulation/circulation/backup	8	3	11
Other			
Index to newspaper	1	1	2
Office support	1	0	1
Independent professional work	1	0	1
Bibliographic instruction	2	1	3
Word processing	2	1	3
Guides and brochures	3	0	3
User interface	1	0	1
Interlibrary loan	0	1	1
Database service accounting	2	0	2
Periodicals currently rec'd	1	0	1
Database searching	2	0	2
Videotext, index to videodisk	1	0	1

TECHNICAL SERVICES

	Use	Major Use	Total
Acquisitions	8	5	13
Serials control	4	1	5
Online cataloging	2	2	4
Catalog card/label production	1	2	3
Other			
Word processing	4	0	4
Office support	2	0	2
Independent professional work	1	0	1
Accounting	3	0	3
Retrospective conversion	2	2	4
Authority work	1	0	1
Statistics	2	0	2
Collection development	1	0	1
Data entry	1	0	1
File maintenance	1	0	1
Union list of serials	1	0	1
Acquisitions lists	1	0	1
Data base management	1	0	1

MANAGEMENT

	Use	Major Use	Total
Budget/financial work	22	23	45
Mailing lists	31	5	36
Scheduling	11	0	11
Word processing	26	28	54
Inventory control	21	1	22
Electronic mail	20	1	21
Communication	12	2	14
Other			
Graphics	1	0	1
Reports	2	0	2
Statistics	8	0	8
Purchasing	0	1	1
Personnel administration	7	2	9
Training for systems	0	1	1
Staff development	0	1	1
Communicate with mainframe	1	0	1
Accounting	4	0	4
Technical documentation	1	0	1
File control	2	0	2
Research and development	1	0	1

PATRON USE*

Number of libraries reporting patron use:	24
Access within library: individual learning/laboratory	20
Access within library: use software in collection	11
Access within library: online catalog	7
Circulation of microcomputers	0

*Many libraries did not report the number of microcomputers used for each type of patron use, and most did not distinguish between "use" and "major use."

SYSTEMS IN USE

Nineteen libraries volunteered information about the microcomputers they are using or plan to use. Some libraries reported more than one type. The results are summarized below.

Computer	No. Libraries Reporting
Apple	1
Apple IIe	1
Apple II+	1
Apple Lisa	1
Commodore Vic 20	2
DECmate 2	1
IBM PC	8
IBM	1
IBM Displaywriter	2
Lexitron	1
Northstar	1
OCLC M300	3
TRS-80	2
Unix based 6800	1

National Library of Canada

January 25, 1984

MICROCOMPUTER WORKSTATION

Dimensions of space available for work station:

Is the microcomputer to be located in a carpeted area or close to a window?

How many employees will be using the microcomputer?

How many hours per day will each employee work at the microcomputer?

Please indicate which of the following pieces of equipment or furniture are required and provide additional information where it is requested:

- screen; please indicate number of screens required, size, colour, also explain why screens are required (eg. security, privacy, etc.)

- table for viewing monitor and keyboard; indicate number of tables required and what special features are required (eg. adjustable feature for keyboard, etc.), if any

- table for printer; indicate number of tables required and special features; if any

- surface for hard disk unit; indicate whether table or shelf is preferred

- work surface; indicate size required

MICROCOMPUTER WORKSTATION

- storage space; indicate what type of storage cabinet is required (e.g. free-standing cabinet, shelf or storage cabinet attached to screen), size required (e.g. storage for manuals or for diskettes), and special features (locks, etc.)

- other; list any other item required (document holder, etc.), quantity, etc.

- chairs; indicate how many chairs are required and whether any special features are required

Explain why DSS modular furniture (e.g. desk, secretarial runoff), cannot be used. Special tilt bases can be purchased and attached to the modular furniture.

Does your microcomputer have adjustable features?

Provide any other relevant information (e.g. will workstation be used by a handicapped person).

Please return to Lucie, Rm. 410C, Admin. Office by 01/24/84.

PSB MICROCOMPUTER APPLICATIONS

INFORMATION CHECKLIST

Division: Enter the name of the Division and, if relevant, Section.

Name: Enter the name of the person(s) providing the information.

Type of Application: Indicate the type of application according to one of the following categories: statistical, Telidon, bibliographic files, word processing, non-bibliographic files, invoicing/product control, or other. If the designation "other" is used, please give a brief description.

Duration:
- short term - ie - can be completed in less than 4 weeks
- long term - ie - will take more than 4 weeks and may be indefinite
- on-going - ie - a permanent or indefinite project
- one-time - ie - a self-contained project with a definite end.

Description: Briefly describe the project and the characteristics of the file and records you wish to create. For statistical applications, list the types of analysis which will be required.

Size: Current
- how many records?
- how many characters/record?
- how many fields/record?
- how much statistical data?

Future - the same questions as above only estimate the size three years into the future. This does not apply if it is a one-time project.

Volume: How many records added per month, year, etc.? When would updates be processed - weekly, daily, monthly, etc.? How frequently would the file be searched/accessed?

Retrieval: Is online retrieval required? If so, by which keys? Sorting options? Batch retrieval and printing?

Product Generation: If hardcopy products are required, please provide a brief description, including: estimated size, retrieval requirements, sorting requirements, fields to be printed, etc. Also indicate if there is a requirement to print records from the terminal screen as well as products printed in batch mode.

Anticipated Benefits: Briefly indicate the benefits which would accrue to your Division and to the NLC if this application was automated.

University of Texas at Austin
DEC 21 1981

WORD PROCESSING REQUIREMENTS
for the
GENERAL LIBRARIES

Prepared By
The Action Group on Word Processing

Mary Beth Bigger, Chair	Carl Lee
Mark Cain	Ann Nelson
Robert Foster	Mary Pound
Chris Hanson	Bob Stewart

December 1981

WORD PROCESSING REQUIREMENTS FOR THE GENERAL LIBRARIES

In October, the Action Group on Word Processing was reconstituted for Stage 2 of its work. Specifically, the group was asked to proceed with:

> The identification of potential levels of word processing support, including equipment types and estimated costs; staff involvement and facilities requirements.
>
> The development of a list of evaluation criteria based on survey results and on the above analysis.

The following report is the result of our investigation.

The main text of this document is a discussion of some of the more important requirements of any word processing system selected for the General Libraries. In addition, the text outlines requirements for implementation of a system, makes a case for the need of other automated capabilities in the General Libraries, and makes predictions about the impact of word processing on library operations.

The list of evaluation criteria is included as Appendix 1 of this document. Appendix 2 describes minimum and adequate levels of word processing support for the library office and Circulation Services (those areas identified as having the most pressing need for such support). Because priorities vary from unit to unit according to the nature and quantity of work produced, specific priorities for each area are identified in Appendix 3. Finally, Appendix 4 provides a classified job description and salary range for a word processing operator.

GENERAL OBSERVATIONS

After having read about and seen equipment demonstrated by four of the major word processing manufacturers, the Action Group on Word Processing has found that similarities outnumber differences in word processing capabilities. More differences exist in the manner in which functions are accomplished than in the end products. Since all of the commercial systems investigated could satisfy a majority of the word processing needs identified, this report sets priorities applicable to all high-need areas of the General Libraries.

RELIABILITY

The highest priority identified in all areas is system reliability. Included in this category are such factors as a low level of down time, ease with which minor problems can be identified and corrected in-house, speed with which the vendor can identify and correct major problems, and the availability of backup or substitute equipment if malfunctioning equipment cannot be repaired immediately. If a shared logic system is acquired, it is important that it be arranged in such a way that one malfunctioning unit does not cripple all associated units. The group recommends that provision be made for copying and storing of tapes in a remote location; for production of paper or microfilm copies of any information which must be available at all times; and for the imposition of stiff financial penalties for a company's failure to meet repair times specified in the contract or maintenance agreement.

UPGRADEABILITY

Another high priority is the ease with which a system can be upgraded. Software is less expensive to upgrade and more flexible than hardware; therefore system capabilities should reside primarily in software. Because the word processing field is changing very rapidly, and new capabilities are being added constantly, the system selected should permit the addition and the upgrading of logic and memory sections. The system should permit more work stations and printers to be attached as needed, and interactive communications with available mainframe and minicomputers should be readily available (protocol adaptive). Beyond

system reliability and upgradeability, priorities vary from unit to unit according to the nature and quantity of work produced. Specific priorities for each area are identified in Appendix 3.

SOFTWARE AVAILABILITY/CAPABILITY

In the initial stages of implemention it will be important to have a vendor who can provide the software support necessary for effective utilization of the system. The vendor selected should be able to provide not only a standard text editing system but also any unique programs needed. Because local programming staff support is not currently available, the question of vendor support in this area is quite important.

Vendor-supplied software packages are seen as more cost effective than in-house development for most word processing applications. In recent years software has become more sophisticated as users have become more aware and demanding, and the software market has expanded, allowing the user more flexibility and variety. This software availability is enhanced in systems which use a state of the art operating system such as CP/M. The ability to compile high level structured programming languages, such as BASIC and COBOL, makes CP/M more attractive. It allows greater flexibility in the use of both the equipment and existing programming staff.

USER REQUIREMENTS

User friendliness is a term commonly used to distinguish current word processing equipment from earlier software adaptations of mainframe and minicomputer systems and printers for word processing purposes. Earlier systems were naturally oriented to data rather than to text, and the software required the user to master the system rather than requiring the system to accommodate itself to the user. User friendliness is now a major consideration in selecting word processing equipment; following are the primary features recommended for any system acquired by the General Libraries.

The input keyboard should be full-sized, so the hands do not easily tire, familiar, so unusual typing skills are not needed to use the equipment, and uncluttered, to prevent inadvertent textual and command errors. Video display terminals should allow a variety of positions to minimize neck and shoulder strain. The character size on the screen should be sufficiently large, clear and distinct to minimize eye strain. The equipment, particularly the printer, should be quiet during use. Equipment heat production should be low so as to be readily accommodated by the available heating and cooling systems of the intended work areas.

Modest typing skills should be sufficient for the system to be more advantageous to the user than a typewriter. Help features such as menus, prompting, and fail-safe features offering some guarantees against inadvertent commands and misunderstood consequences should be standard. For the frequent and facile user, a bypass of menus, prompting, and fail-safe features may well be desirable.

Text input and processing commands should be simple and straightforward. Errors in input and processing commands should be quickly apparent and easily correctable. Training should make the prospective user confident that the system positively aids the user in mastering word processing problems, and is not itself an additional problem *en route* to useful production.

The system's capabilities should be such that what needs to be done not only can be done, but can be done easily. Obviously this is true at several levels but should prominently include the programming functions assigned the user by the system, whether in the creation of formats for text, tables to be sorted, or statistics to be manipulated. Using these relatively sophisticated capabilities, the user should not be confused, discouraged, or bewildered.

FACILITIES REQUIREMENTS

Adequate space, including storage, and lighting, preferably adjustable, are basic facility-related concerns for word processing operations. Most vendors claim that their products are not static-affected (which should be user-verified) and also that their products function well on standard 115 VAC power line outlets, though most vendors do recommend that these lines be dedicated and/or rated for additional amperage. Conduiting for interconnects between satellite workstations and printers may be recommended in some situations, and care must be taken not to exceed vendor specified limitations on distances between such units. Depending on whether modem or cable connections are projected for communications between word processing units and outside computers, there may be some need for specifying phone outlets and/or conduiting. Choice of standalone satellite workstations or shared logic satellite workstations obviously affects factors such as ease and facility of workstation movement and access to printers.

TRAINING/COORDINATION PERSONNEL

In initial stages of implementation, two persons should be identified as trainers for all staff who use word processing equipment and as coordinators for work flow, supplies and equipment maintenance. These trainers/coordinators would be located in and responsible for word processing activities in, respectively, the Library Office and Circulation Services.

Responsibilities of the trainers/coordinators would include receiving in-depth training from the word processing vendors, serving as liaison between the vendor and the library, providing in-house training at all appropriate levels, serving as a resource person and problem solver for word processing users, and monitoring effectiveness and efficiency of equipment use. Instruction in communication and training skills would be required as part of the training/coordinators' training. Training/coordinators would also become thoroughly familiar with equipment maintenance and repair procedures, contact vendors when problems could not be corrected in-house, and guarantee the availability of equipment-specific supplies at all times.

BEYOND WORD PROCESSING

A priority identified in many high-need library areas is amount of storage space which, even in presently-identified document production, appears to exceed effective storage capabilities of much of the stand-alone equipment. The complexity and interrelatedness of functions required in some areas, particularly when combined with large storage requirements, suggests that the ability to communicate with the Amdahl in Data Processing would be more appropriate than trying to make word processing equipment function like a large computer.

Many of the files and lists in Circulation Services (locker renewals, reserves lists, ILS internal circulation records, etc.) could be converted to machine readable form, greatly reducing duplicative files and manual labor, and increasing services to users. Access to and integration with circulation records would be particularly useful. In the Library Office, production of a single personnel record per staff member with multiple access to necessary information (employment record, payroll, evaluation, vacation/sick leave, etc.) would greatly simplify internal operations.

In the library personnel office, direct transfer of machine readable data to OPSER and Payroll is a future possibility to be actively pursued. Automation of library bookkeeping operations, which may exceed word processing capabilities, would improve currency of and access to needed financial information.

Availability of programming staff from the Systems Office is fundamental to all capabilities identified in this section. While it is clear that adequate staff is not currently available, it would be

shortsighted to acquire word processing equipment for the present without considering the probability that such capabilities would be required and supported in the future. It is recommended that the General Libraries acquire equipment that has (or can be upgraded to have) the communications capability, so that files input now can continue to be used and so that staff trained in equipment use are not required to retrain on completely different equipment in the future.

PREDICTIONS

Based on reports from offices which already use word processing equipment, from our reading, and from our experience with other types of automated equipment, the group predicts that many or all of the following conditions are likely to exist following the acquisition of word processing equipment for the General Libraries:

- The amount of equipment acquired initially will soon become inadequate as actual use exceeds the needs identified in the survey.
- Hardware and software capabilities will continue to expand rapidly, reinforcing the importance of having invested in flexible, upgradeable equipment and software.
- Regardless of the amount of planning and reorganization done prior to implementation, staffing patterns and work flow will change as staff grow more familiar with equipment capabilities.
- Staff at the lower end of the pay scale (Clerk Typists, Sr. Clerk Typists) will obtain more lucrative jobs elsewhere as soon as they are trained to use word processing equipment. Upgrading positions for staff required/allowed to use word processing equipment is likely to follow (see Appendix 4).
- Having word processing capabilities will not reduce staffing levels or save money; rather it will improve quality of output and variety of services, increase job satisfaction of users and their managers, and lead to more cohesive and productive internal organization.

Word Processing Components to be Investigated								
	1.	2.	3.	4.	5.	6.	7.	8.
1. Environment								
2. Stand Alone								
3. Shared Logic Configuration								
4. Equipment								
a. Workstation								
b. Printer								
c. Communications								
d. Linkage limits								
e. Enhancement capabilities								
f. Memory								
g. Storage								
h. Other								
6. Printer								
7. Mathematical Functions								
8. Programmability								
9. Communications								
10. Other Applications								
11. Set up/Maintenance								
12. Vendor Training								

13. Existing Software								
14. User Friendliness								
a. Simplicity								
b. Prompting								
c. Menu bypass								
d. User manual clarity								

Workstation Software/Hardware: Vendor Summary								
	1.	2.	3.	4.	5.	6.	7.	8.
1. Background Processing								
2. Block move/copy								
3. Centering, automatic								
4. Character pitch on CRT								
5. Character size control								
6. Character spacing on CRT								
7. Column move/copy/delete								
8. Control mode display								
9. Cursor positioning								
10. Decimal alignment, automatic								
11. Display buffer memory								
12. Display highlighting								
13. Page end stop command								
14. Footnote recognition, alignment								
15. Form display, stored								
16. Format code display								
17. Graphics capabilities								
18. Headings/footings, automatic								
19. Horizontal scrolling								
20. Hot zone								
21. Hyphenation, automatic								
22. Hyphenation, discretionary								

23. Justification								
24. Keyboard								
a. Full-size/not								
b. Modular/Linked								
c. Ten-key pad								
d. Code/Programmed/Command								
25. Line spacing on CRT								
26. Margin adjustment, automatic								
27. Multicolumn page display								
28. Multiple copies								
29. Page numbering, automatic								
30. Page scrolling								
31. Partial file copying								
32. Proportional spacing, display								
33. Programmability (COBOL, etc.)								
34. Repagination, automatic								
35. Revision modes								
36. Screen (CRT)								
a. Lines (#) Displayed								
b. Resolution								
c. Character size(10/12/15)								
d. Adjustable positioning								
e. Eye ease								
f. Bright adjust								

37. Search								
38. Search & replace, global								
39. Sort								
40. Spelling check								
41. Subscript display								
42. Superscript display								
43. Tab memory								
44. Text Processing								
45. Underlining (double), auto								
46. Underlining, automatic								
47. Underscore display								
48. Underscore, automatic								
49. Vertical scrolling								

Printer: Summary by Vendor								
	1.	2.	3.	4.	5.	6.	7.	8.
1. Bidirectional printing								
2. Bold print (double strike)								
3. Character set								
4. Collation								
5. Daisy wheel								
6. Dot matrix								
7. Dual multi-sheet feed								
8. Feed mechanism								
a. Friction								
b. Pin								
c. Tractor								
9. Fonts								
a. No. fonts on-line								
b. No. English fonts								
c. No. foreign fonts								
d. No. math/sci fonts								
10. Format control								
11. Graphics capabilities								
12. Horizontal tabs								
13. Incremental spacing %/in								
14. Image quality								
15. Maximum line width (chars)								

16. Multi/single feed								
17. Multipart forms strike ability (no./generations)								
18. Noise level (sound hood)								
19. Output volume								
20. Paper min/max width								
21. Paper min/max weight								
22. Physical size								
23. Proportional spacing								
24. Print pitches 10/12/15								
25. Printer buffering (no./jobs)								
26. Printer speed								
27. Ribbon colors								
28. Vertical lines/in								
29. Vertical tabs								

Mathematics Software Packages/Summary by Vendor								
	1.	2.	3.	4.	5.	6.	7.	8.
1. Addition								
2. Boolean operators								
3. Division								
4. Decimal alignment, automatic								
5. Horizontal calculations, auto								
6. Multiplication								
7. Memory registers (subtotals)								
8. Percentages								
9. Subtraction								
10. Vertical calculations, auto								
11. Keystroke program/save								

APPENDIX 2

POTENTIAL LEVELS OF WORD PROCESSING SUPPORT

	Minimal	Adequate
Director's Office	One terminal tied to one printer, both located in Schuster's office. Access: Cain.	Two terminals tied to one printer; terminals in Cain & Schuster's offices, printer-Schuster's office.
Public Services Office	One terminal tied to central printer; terminal located in Powers' office. Access: Barton, Kupersmith, publicat'ns.	Same unless use by Barton, etc., is greater than indicated in survey.
Personnel Office	Two terminals tied to central printer; terminals in Ratcliff & Schmidt's offices. Access: Esquivel, Foster, Film Lib., & Treppa.	Three terminals tied to central printer; terminals in Ratcliff, Schmidt, & Foster's offices. Access: Treppa, Esquivel, Film Lib.
Circulation Services	One terminal tied to one printer, both located in Circ. Serv. office. Access: Secretary & Clk-Typists.	Three terminals tied to one printer; terminals located in Circ. Services, ILS, & Reserves, printer in Circ. Serv. Access: staff in all three areas.

NOT INCLUDED IN KIT → Suggested configurations for terminals and printers appear on the following floor plans.

APPENDIX 3

PRIORITIES BY LIBRARY AREA (NOT RANKED)

Director's Office

Print quality
Security
Ability to make multiple originals
Variable type fonts
Math package
Dual sheet feed on printer
Work station and printer located in office (receptionist)

Public Services Office

10 key calculator pad
Math package
Ability to manipulate columns easily
Large storage capacity
Print quality
Variable type fonts
Work station located in office (receptionist)

Publications

Easy manipulation of formats
Copy of multilith printing quality
Ability to use high speed printers on campus as alternative for long documents
Variable type fonts
Graphics capability
Ability to produce tape which can be read by Printing Division's Mergenthaler 325 system

Personnel Office

Ability to print UT standard forms
Ability to print multi-part forms (as many as six parts)
Security
Print quality
Math package
10 key calculator pad
Multiple access to files
Large storage capacity
Ease of use

Circulation

User friendliness, quality of training documents, system prompts
Envelope quality with dual sheet feed on printer
Math package
Large storage capacity
Dictionary & spelling
Graphics capability

Personal Computers
in the
University of Michigan Libraries

DISCUSSION DOCUMENT

Selden S. Deemer

Systems Office
University of Michigan Libraries
November 22, 1983

Personal Computers in the University of Michigan Libraries

Executive Summary of Recommendations

1 Planning and support

Detailed plans should be developed for a phased implementation of personal computer systems over the next 24 months, including financial impact, locations, and long-term integration with library operations and computer systems.

Support for personal computers in the library system should come through the Systems Office. Such support would be primarily in the areas of selection, software acquisition and distribution, training, and development of library-specific applications using standard software.

2 Use of personal computers

Initially, personal computers should be used as productivity aids for professional staff. They should be made available on a unit basis, rather than on an individual basis, until costs drop further.

3 Applications

Tasks with a high yield, in terms of improved productivity and low support requirements, should be the first supported. These include general writing, with a word processing program; statistical reporting and budget planning with a spreadsheet program; and, where needed, maintenance of small bibliographic files with an appropriate file manager program. More complex applications, particularly those that interact with other library data bases should not be attempted initially.

4 Standardization

Standardization of operating systems, application programs, and hardware will reduce support costs and encourage exchange of experience and data. At the minimum, such standardization should be applied within the library system, although regional and national norms should also be considered.

Specific recommendations for a "standard" personal computer system would include the MS-DOS and/or CP/M operating systems, 2 disk drives, 128K of electronic memory, a character oriented display, and small dot-matrix printer. Both word processing and spreadsheet programs should be included in the base system. The IBM PC is recommended as the most suitable personal computer for generalized library applications. The Zenith Z-100 is an alternative choice, particularly if initial purchase is an important factor.

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Appendix A: Microcomputer System Cost Estimates

Appendix B: Individuals Interviewed

Appendix C: Documents & Other Materials Reviewed

Appendix D: Personal Computer Market Overview

1. Overview: Personal computers as information tools.

The University of Michigan Libraries are using computing resources for relatively large processing operations, such as Acquisitions, Cataloging, and Circulation. Computers can also be applied effectively on smaller, less structured applications, such as writing, statistical reporting, budget planning, and manipulating small bibliographic files,

Such tasks often take up a substantial portion of professional staff time. The personal computer is a new tool that should be made available to professionals for managing information with increased productivity.

1.1 Issues

A key issue is whether personal computers will be acquired on an individual, site by site basis, or as part of a planned process with some central guidance. Although in many ways the library system is only loosely centralized, if individual units acquire personal computers based solely on local needs there is a substantial risk that the equipment and programs so obtained will be incompatible. Program maintenance and exchange of information will be difficult and expensive.

Other issues that must be addressed include defining which tasks are appropriate for personal computers; where in the library system they will be used; what supporting resources should be provided; whether personal computers should communicate with each other and/or with other computer systems such as GEAC, RLIN, the Computing Center (MTS), and the Data Systems Center (DSC); and, finally, control of and responsibility for data generated through personal computers.

1.2 Recommendations for planning & support

Unless the library administration decides to discourage all uses of personal computers, the administrative planning process should begin quickly to address the consequences of supporting substantial numbers of personal computer systems throughout the library system. Following sections of this paper address particular issues in greater detail.

Both the Computing Center and the UCCPU Subcommittee on Microcomputer Policy have recommended expanding support for microcomputers at the University, centrally and at the unit level. Within the library system, the logical unit to provide support is the Systems Office. Support in this context includes planning for the coordinated use of personal computers, staff training, and maintaining an information center for library applications of microcomputer technology.

Library support for personal computers must complement, but not duplicate the role of the Microcomputer Support Group. Most potential users of personal computers in the library system will

require training and advice to use these machines effectively. Where needs are specific to library applications, this help should come from within the library, rather from data processing professionals who lack a detailed understanding of library needs. At the same time, we should serve as a resource to the Computing Center Microcomputer Support Group in our particular areas of expertise, and as a channel for MSG information to the library community.

A master collection of all software in active use in the library system should be maintained and cataloged. Personal computer support staff should be responsible for keeping track of all software updates, including distribution and staff training, where required.

2 Personal computing in an information organization

Organizations may be viewed as structures for the manipulation and control of information, a view which libraries fit especially well. Computers are important tools for those who manage information, and they are assuming continually increasing importance in this area of work because of their ability to multiply the effectiveness of their users. As computing becomes more integrated into the work of information professionals, demand grows for individual access to computing resources.

2.1 Shares of large systems

The traditional approach to providing individual access has been through a large computer with enough power to handle many users seemingly at once. A terminal provides the user with access to, depending on his abilities, all the resources of the central computing system. Where large amounts of data need to be stored and manipulated this approach often remains the best way to provide individual access to computing resources. However, the terminal is merely a window to the computer; all storage and processing are done centrally. This approach has significant drawbacks for the non-technical user.

The centralized computer system may be perceived as a remote entity that is not under the user's control. Because the system is generalized for many purposes, more must be learned about computers than is desired before being able to do anything. Often the intervention of a computing professional is required to develop an application before the user can do any work; once defined, the application can be modified only through this intermediary. Charges are based on usage, and many people are reluctant to use the system enough to gain true familiarity and feel at ease. The computer becomes an unavoidable necessity of the contemporary workplace, to be used only in well-worn paths. Whether through lack of understanding or the need to work through an intermediary, large computer systems are seen by many people as relatively inflexible tools.

2.2 Personal computers

Personal computers offer a subtle difference because their users feel they are more in control of the machines. Costs for using a personal computer do not add up minute by minute, and users generally are more willing to experiment and learn more about them. Perhaps most importantly, results are immediately visible, and the user's work is stored on a medium--the floppy disk--that is physically under his control. The combined effect makes the personal computer a tool that will be used more than a terminal, and for more varied purposes.

2.2.1 Personal computers defined

In the context of this discussion, a personal computer is a self-contained system that serves only one user at a time. Specifically, a personal computer system includes a processing unit with a microprocessor, electronic memory (RAM) and one or more mass storage devices (usually a disk drive), a keyboard and a display. Such a system is capable of both processing and storing data without being connected to any other computer. Links with other systems may be established if necessary, through telephone lines or through direct connection to form a local area network (LAN). The IBM PC and Apple personal computers are representative of this type of system; the Altos microcomputer, which supports more than one user at a time, is not.

2.3 Applications suitable for personal computers

Tasks initially suited to personal computers generally involve local work, such as reports, papers, guides and brief bibliographies, scheduling, and budget planning. They do not, generally, directly affect the operation of the rest of the library system. Such tasks may be carried out with a minimum of standardized software and little programming knowledge or support. Several people may be users of a single personal computer, with separate or shared files of flexible disks, according to need.

In this type of environment, data communications with other systems, if supported at all, are generally one way; i.e., GEAC, for example, may be used as a source of information, but data may not be sent that would modify the GEAC data base. This does not mean that interactive applications with other computer systems will not evolve, merely that they need not be supported initially.

2.4 Recommended usage of personal computers

Staff should be encouraged to use personal computers as productivity aids for local applications, but discouraged from independently taking on jobs that require programming support or interaction with existing applications on other systems. Initially, personal computers can be installed as independent systems; however at least some will eventually need to become part of communicating networks, either with each other or with other campus and library computer systems.

3 Library applications

Most library applications will involve writing, rather than large scale numeric processing. Within textual applications it is necessary to distinguish between those which are non-bibliographic in nature (reports, papers, scheduling, planning, etc.) and those which involve bibliographic records. Even though such records are basically textual in nature, their relationship with the information needs of the library system as a whole requires special attention.

3.1 Non-bibliographic applications

The most easily identified of these include support for various forms of writing, statistical reporting, and budget planning. Two general types of software can support most of these tasks: word processing and spreadsheet programs.

3.1.1 Word processing

A word processor is a computer program that assists a writer in the entry, editing, and formatting of textual information. Using a word processor places the writing process in a new medium, and may be compared with more traditional ways of writing as sculpture in clay is to sculpture in stone. One medium allows the work to be re-shaped continuously at any time up until final fixing, while the other forces the creator to start all over again in order to incorporate new ideas.

The productivity of staff who must produce both routine and creative forms of writing, including correspondence, reports, articles, guides, training manuals, and policies can be raised substantially through direct access to a personal computer with good word processing software. Improvements of over 100% are the norm, especially with documents that require substantial revision or updating. However, it is important that the writer have direct access to the equipment; word processing through a secretary does little to improve the productivity of the writer.

3.1.2 Statistical reporting and budget planning

The primary tasks involving numerical processing in most units are statistical reporting and budgeting, including both tracking and planning expenditures. These applications can be supported through spreadsheet programs such as Visicalc, Supercalc, Multiplan, or Lotus 1-2-3. A spreadsheet program allows a table, called a "template" to be set up with rows and columns of variables that are dependent on each other. New entries to the spreadsheet lead to automatic re-calculation of all dependent variables. This makes a spreadsheet program a particularly valuable tool for tracking monthly statistics and for constructing models to help visualize the results of different courses of action. The major effort in using a spreadsheet is expended in defining the template to be used.

3.2 Bibliographic applications

Many library word processing applications deal with bibliographic records, and might be better served by a program that treats each record as a separate item. Failure to do so carries substantial costs:

* A library may invest a substantial amount of effort creating bibliographic records that already exist elsewhere in the system. Once created, these records may diverge from existing records unless considerable effort is made to keep them current.

* If a group of records is treated as a single block of text (e.g., a bibliography), it is difficult to manipulate them without re-typing the entire text. For example, a list of books arranged by author cannot be re-sorted easily by call number.

3.2.1 Guides and lists

Personal computer programs are available that assist in creating and manipulating lists of bibliographic records. Their use is preferable to producing such lists through generalized word processing software. Public service units are frequent producers of guides and lists, and could benefit substantially from the ability to compile and revise them using personal computers.

3.2.2 Inter-relationships with larger bibliographic systems

The creation and maintenance of small, local bibliographic files offers great potential for both increased productivity and unnecessary duplication of effort. In the long run, it will be desirable for local users to be able to extract these records from larger systems. The main advantage to using a personal computer for this purpose, rather than a terminal, is that the extracted records can be stored and processed locally without incurring on-line use charges. They can subsequently be put to local uses, or sent back, after processing to the larger system. Personal computers, with proper planning, may eventually have an important role to play in an integrated library system

3.3 Recommended applications for personal computers

Initial support should be directed to text processing, statistical reporting, and budget planning, from which immediate benefits are likely. Independent development of large local bibliographic files should be discouraged. The planning process should include the role of personal computers in the development of an integrated library system.

4 Implementation and policy issues

If the applications described above are seen as reasonable and productive, the first issues concern the number and locations of personal computers to be supported in the library system. Given current budgetary constraints, it would be difficult initially to justify a personal computer for every professional who wants one. In the long term however, these machines are likely to become as ubiquitous as telephones and typewriters.

4.1 Standardization

It was pointed out at the beginning that failure to set standards can lead to chaos, with a waste of both financial and personnel resources. Standards are clearly required, but should they be in response to internal or external needs of the library system? If only one brand of microcomputer is supported within the library system, this would represent internal standardization. When the need to communicate with other parts of the university is considered, another level of standards must be considered, as only certain systems are supported for access to MTS or DSC.

In the national context, the actions of other libraries must be considered. As an example, the IBM PC has set a de facto standard for a substantial portion of the personal computer market. It has been accepted for use by OCLC and WLN, with the possibility that RLIN will do the same. The substantial savings that would result from internal standardization on a system less expensive than the IBM PC might eventually disappear in a wider context.

4.2 Operating systems standards

The operating system is a group of control programs that allow a personal computer to do useful work without a detailed knowledge of its internal workings. Standardized operating systems allow programs and data to be transferred among different computer systems. At this time the CP/M operating system supports the largest base of existing programs, while the majority of new programs are being written to operate under the MS-DOS operating system.

4.3 Software standards

Computer programs are software; largely invisible sets of instructions that allow the computer hardware to carry out specific tasks. Several major benefits derive from software standardization:

* Initial costs can be reduced through special multiple purchase agreements;

* Training costs can be reduced because all users are familiar with the same programs. Support staff can

become more knowledgeable if not required to support a large number of different programs;

* Development costs can be reduced because the work to develop a particular application need not be duplicated to implement a similar application elsewhere;

* Data can be transferred between personal computers easily, either by linking computers or by exchanging flexible disks without any conversion.

The applications described above, word processing, statistical reporting, budget planning, and small-scale bibliographic file maintenance, can all be supported with standard software.

4.4 Hardware standards

Hardware is a term that applies generally to the personal computer systems themselves--the physically visible objects--in contrast with software, which is an intellectual construct. Even if operating systems and applications programs are standardized within the library system, the existence of different makes of personal computers will make support unnecessarily difficult. Both operating systems and programs may be optimized in subtle ways that make for incompatibility between different hardware systems. Peripheral components such as printers, modems, and other devices may be partially or completely incompatible, with a need for increased support or supplies, or both.

4.5 Recommendations for support

Support for personal computer users may range from none to extensive. More support rather than less is recommended because most users on the library staff are expected to have relatively little technical background. In order to provide knowledgeable assistance and avoid chaos, the number of different systems in general use must be limited. Ideally, one, or at most two, operating systems and families of hardware should be supported. Both hardware and software should be available to and used by staff who are expected to provide support. In making recommendations for support, the Systems Office should not be viewed as attempting to exert a veto over purchase requests (particularly for software). However, we must recognize that failure to limit support to 'approved' systems will inevitably result in demands on staff that would mean inadequate support for all users.

4.5.1 Recommended Operating Systems

Support should be limited to CP/M and its variants (including MP/M) and to MS-DOS and its variants (including PC-DOS and possibly Z-DOS). These two families of operating systems support the majority of business and professional applications programs currently in existence or being developed. They will be pre-dominant in the single-user personal computer marketplace for at least the next 3 years.

4.5.2 Recommended software

The recommendations made here are based on a recent review of the literature, conversations with library staff and others, and to a limited extent, on programs already in use within the library system. Because this is an area where change is continuous, recommendations should be considered as tentative until implemented. Once certain programs have been put into use, they should be abandoned only if found to be clearly unsatisfactory. Market pressures will assure that any well-chosen software will continue to evolve with new releases in order to maintain a competitive position. Improvements in performance should be sought through this channel rather than through switching to totally different programs.

4.5.2.1 Word processors

If only the IBM or closely compatible personal computers are supported, Multimate is an outstanding program which has been on the market long enough to be stable, but is still new enough to be up-to-date. Multimate was designed to perform in a manner similar to the Wang dedicated word processor. It is easy to learn, powerful, well-documented, and offers good potential for use in a shared environment, should this evolve. The list price for Multimate is $495, although it may be available to the University at a far lower cost for quantity purchases. (at least 28 IBM PC's are in use with Multimate at the UM financial administration offices.)

If more than one personal computer system operating under MS-DOS is supported, Final Word would be an excellent choice. Although somewhat difficult to learn, this program is very powerful, and enjoys widespread use and support at UM. Final word is available to UM users at a special price of $75 a copy.

WordStar is recommended only for use on personal computers operating under CP/M; namely, the Osbornes and the Altos. For the casual user, WordStar is both difficult to learn and unforgiving of mistakes. Because of WordStar's popularity, a large number of training aids and supporting programs exist.

4.5.2.2 Spreadsheet programs

Although Visicalc is the best known and most widely used spreadsheet program, it is also the oldest. Newer programs such as Supercalc, Multiplan, and Lotus 1-2-3 offer considerably more capability and, often, greater ease of use. Because statistical reports and budget planning, while generated locally, are usually sent on to the central administration, standardization is particularly important for this application. Since Supercalc is already being used on the Osbornes and on the Altos, it is recommended. A library of standard Supercalc templates should be developed for all libraries to use in these applications.

4.5.2.3 Bibliographic file management

Personal Bibliographic System is recommended, as it meets most of the needs for such applications at a reasonable cost. Since this program is being developed in Ann Arbor, support should be good, and the possiblility exists for favorable pricing to the University.

4.5.3 Recommended personal computer systems

Given the current rate of technological change, it is probably not worth the time and effort to try to select a system that will last for more than 5 years--which does not mean it will not be capable of performing useful work for far longer. Initially, and unless specific local needs make this impossible, each personal computer system should be configured as a movable workstation on a wheeled table. Such an arrangement encourages use by more than one person, in that person's workplace, in the simplest possible fashion. Transportable personal computers, such as the Osbornes, do not require such workstations.

Four Osborne microcomputers are presently being supported through the Systems Office. Support for these machines be frozen, and no additional hardware or software purchased for them, although revisions to existing software might be considered, if available. Their use as 'production' machines should be discouraged. A few such applications already exist, and text files already created on the Osbornes should be transferred to other machines as soon as they are available.

The IBM Personal Computer, equipped with 2 double sided disk drives, 128K of memory, and a character oriented monitor, is recommended as the first choice. Such a system can handle the vast majority of software now available, and can be expanded relatively easily and economically to accomodate foreseeable needs, including local area networking. This is not state-of-the art equipment, nor is it the cheapest system available. It works, and has a tremendous amount of market support. IBM-PC 'clones'; that is, computers designed to be as compatible as legally possible, might fall within this category. They generally offer better price/performance ratios initially, but entail some risk of incompatibility.

Special note should be made that GEAC offers software permitting an IBM PC to operate as a back-up system if GEAC is down. This software is supported for the IBM PC only, as it makes use of the cassette port, which is not present on the PC XT or most clones.

An excellent alternative to the IBM would be the Zenith Z-100, available to U. of M. with essentially the same specifications at substantially less cost. If it were not for the overwhelming influence of the IBM PC in the marketplace, the Z-100 would rank as first choice, as it offers a better keyboard, runs faster, and uses an industry standard hardware bus. The Z-100

can be expanded in much the same way as the IBM, although some components tend to be about twice the price of comparable equipment for the IBM.

A caveat: initial purchase price is only one--indeed, probably the smallest--part of the total cost of running a computer system over any significant period of time. A rule of thumb is that it will take 50% of the acquisition cost each year to keep a small system doing useful work. A substantial risk exists that the initial price advantage of the Zenith would evaporate over time. Support costs will be higher in a mixed system environment, both for user training and for application development.

The benefits of standardization extend also to printers. If the print quality is acceptable to users and to the Library administration, dot-matrix printers offer good reliability and printing speed, and they are cheap to purchase (about $600) and operate. The Epson FX80 is already in use and is well-supported.

Formed character printers offer better print quality than matrix printers, but operate more slowly and with less flexibility. Until very recently, they were considerably more costly to purchase, but this situation is rapidly changing. Another new development is the ink jet printer which offers near letter-quality printing with the speed and flexibility of a matrix printer. They also operate with far less noise. The first ink jet printer under $2000 appeared this year, and another has recently been introduced under $1000. Although benefits would derive from standardization, it is premature to make specific recommendations for formed character or ink jet printers at this time.

5 Summary of recommendations

5.1 Planning and support

Detailed plans should be developed for a phased implementation of personal computer systems over the next 24 months, including financial impact, locations, and long-term integration with library operations and computer systems.

Support for personal computers in the library system should come through the Systems Office. Such support would be primarily in the areas of selection, software acquisition and distribution, training, and development of library-specific applications using standard software.

5.2 Use of personal computers

Initially, personal computers should be used as productivity aids for professional staff. They should be made available on a unit basis, rather than on an individual basis, until costs drop further.

5.3 Applications

Tasks with a high yield, in terms of improved productivity and low support requirements, should be the first supported. These include general writing, with a word processing program; statistical reporting and budget planning with a spreadsheet program; and, where needed, maintenance of small bibliographic files with an appropriate file manager program. More complex applications, particularly those that interact with other library data bases should not be attempted initially.

5.4 Standardization

Standardization of operating systems, application programs, and hardware will reduce support costs and encourage exchange of experience and data. At the minimum, such standardization should be applied within the library system, although regional and national norms should also be considered.

Specific recommendations for a "standard" personal computer system would include the MS-DOS and/or CP/M operating systems, 2 disk drives, 128K of electronic memory, a character oriented display, and small dot-matrix printer. Both word processing and spreadsheet programs should be included in the base system. The IBM PC is recommended as the most suitable personal computer for generalized library applications. The Zenith Z-100 is an alternative choice, particularly if initial purchase is an important factor.

Appendix D

Personal Computer Market Overview

Although less than 10 years old, personal computers have already evolved through several generations, from the first primitive and small machines through the current generation of systems, which surpass, in many ways, the capabilities of so-called main frame systems of 20 years ago.

Technological Change

Several general trends have been evident for a number of years and will continue to be important:

* Because the industry is driven by technology, whatever system one chooses will be technologically obsolete by the time it is producing any useful results. So what? As long as the system does the job it was intended for, it may be operationally satisfactory for many years.

* The minimum acceptable amount of memory keeps growing; by the end of 1983, that minimum is 128K; by 1985 2 megabytes may be 'standard'.

* Because of demands for memory, 16-bit and 32-bit architectures will gradually push 8-bit systems out of the picture. In general, the number of bits that a system can manipulate at once determines how fast it will process data, as well as how much active memory can be addressed; this also affects operational speed.

* Bus-oriented, open hardware systems following industry standards will win out over closed, proprietary systems. A hardware bus is a circuit path with a number of side-by-side connections. A bus-oriented system allows expansion to meet new demands or take advantage of new technology. The IBM PC and the Apple are examples of bus-oriented systems that have established their own de facto standards; the Zenith Z-100 uses the S-100 bus, which has been adopted as an IEEE standard.

* A few standardized operating systems will permit program development and file transfers among many different hardware systems.

Operating Systems

Every microcomputer system requires a control program--called an operating system--to be able to perform useful work. For single-user applications, two operating systems, CP/M and MS-DOS (including PC-DOS and Z-DOS), are keys to large libraries of applications software. Figure 1 shows a sales projection of major operating systems for microcomputers through 1986. For the immediate future, UM Libraries should consider only hardware/software combinations that run under these 2 operating systems. UNIX and other multi-user operating systems are in a state of flux, and can be acquired at a later date, if required.

Hardware Systems

There is virtually universal agreement on the IBM PC as one of the choices for any institution trying to standardize its microcomputer systems. This is not because the IBM PC is the best machine on the market, for it is not. "In the price/performance race, the PC doesn't finish first; manufacturers and market observers agree that plenty of other personal computers can, and do, beat it." [1] King, 1983. However, because the demand for the IBM PC is greater than for any of its competitors, more software is currently being developed for it than for any other system. The same is true for optional equipment. Market pressures ensure that software and hardware compatible with the IBM PC are not only more available, but often cheaper than their non-IBM equivalents. Figure 2 shows the projected market share of the IBM PC through 1986.

In the library field in particular, the recent choices by OCLC and WLN of the IBM PC as the basis for their 'standard' terminals (with RLIN rumored to be likely to do the same) makes the PC the overwhelming choice. [2] SCIL, Sept. 1983. The same market forces already at work in the general business computing market should also work to the advantage of any library choosing to support the IBM PC (including so-called 'clones', such as the Columbia, Compaq, and Corona) as its recommended microcomputer.

One potentially viable alternative to following the de facto standard of the IBM PC lies with systems using the MS-DOS operating system on the S-100/IEEE 696 hardware bus. Such systems offer some compatibility with the IBM PC at the file level. This means that data--but not programs--may be transferable among different machines. Because of a special marketing agreement with the University, the Zenith Z-100 is the most attractive of these systems.

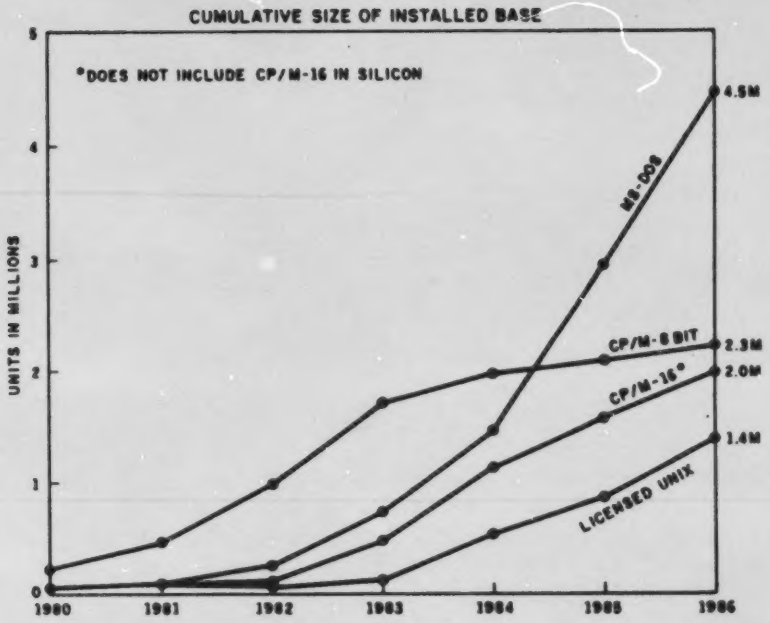

Figure 1: *Projected sales of major nonproprietary operating systems through 1986.*

Yates, 1983

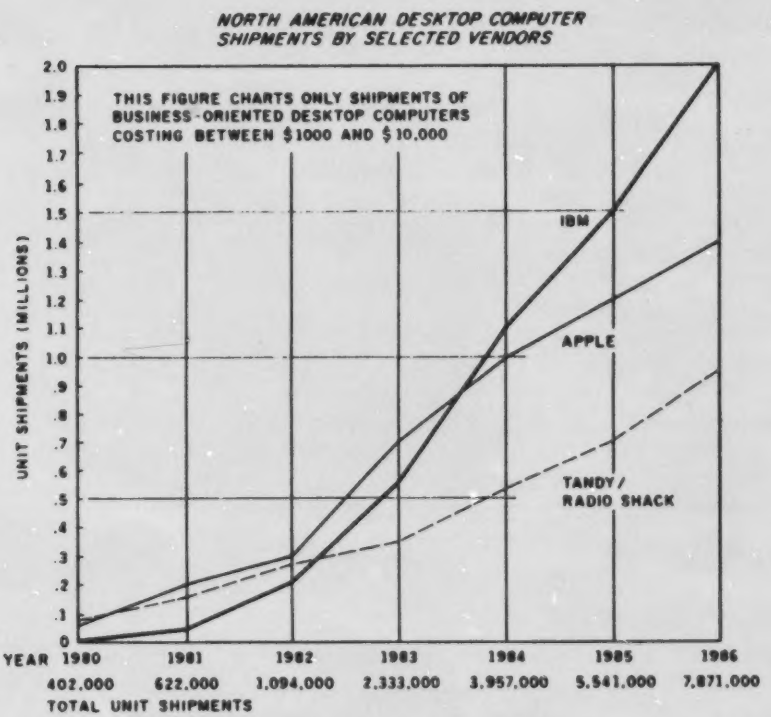

Figure 2: *This figure depicts the North American shipments of business-oriented desktop systems costing between $1000 and $10,000. While Tandy (Radio Shack) was an early leader in the personal computer market, it was eclipsed by Apple, whose market position is now threatened by IBM.*

Gens, 1983

GENERAL PRECEPTS FOR CONSIDERING OFFICE AUTOMATION SYSTEMS

1. Primary importance should be given to word processing capabilities; ease of learning; ease of use by both casual and experienced users.

   --The word processing application should not be code-intensive. The fewer key strokes required to accomplish a function, the better. The more mnemonic the system, the better. A number of systems operate with a function key and the first letter of the English word for the desired function, such as function key "move" followed by "s" for sentence.

2. Math and graphics capabilities should exist within the word processing software packages or be easily accessible. Math and graphics products should be easily brought into regular text.

3. Possibilities for using other software applications: spreadsheets, etc. and ease of transferring information between various applications should be considered.

4. Network possibilities. Communication must allow completely edited files to be transferred and reedited in other locations. Hard-wired, local area networks, and telephone modems will all be possibilities for creating a system.

5. Phased implementation is entirely possible: start with standalone units and tie together using a local minicomputer or a larger host computer (UTCC). Or for less cost, tie together with a local area network (LAN) that allows point to point communication.

6. Do not choose standalone units without considering expandability into a network. All work entered in the initial system might have to be rekeyed if the system is changed in the future.

7. The primary workstations for professionals in the future might be personal computers which could be joined in a network of their own within or between departments. Such personal computers may or may not be able to interface totally with dedicated word processors. Consideration should be given to this issue when planning for the initial purchases and for a network.

8. Hardware.

   --Keyboard. Fewer function keys and labelled function keys seem best for new or casual users. Low-profile and detached keyboards seem to be the coming standard [all systems we saw had detached keyboards.] Most use a standard selectric-type

keyboard with various additions to it.

--Arrangements for keeping a desktop relatively clear of hardware seem attractive. Can the CPU (controller) be hung from the side of the desk or placed on the floor? Can the screen be easily moved aside or reside on a movable arm?

--Keep the amount of space taken up by the workstation hardware to a minimum. Are the disk drives a separate piece of equipment or part of the CPU?

--Screen. The display screen should be movable to avoid glare at different times of day and in varying locations. Options to change brightness or color of brightness will be appreciated by individuals within the organization.

--Printer. Minimizing the noise of the printer will be an important consideration. High-density dot-matrix printers solve a number of problems: 1) solid-line printing, 2) less noise than impact (daisy-wheel) printers, 3) can do graphics as well as text, 4) provide faster printing if draft-quality is satisfactory. Different kinds of printers may be acceptable in different Library departments, however dedicated word processors usually require specific printers [same manufacturer] because the printer is software-connected to the word processor.

Business graphics require either a dot-matrix printer or a plotter. It will be more economical if a single printer can handle all kinds of print jobs.

Daisy-wheel impact printers are fully capable of letter-quality printing but are slower, noisier, and use many more ribbons than do dot-matrix printers. High-density dot-matrix printers can produce letter-quality printing as satisfactory as impact printers, but normal dot-matrix printers may not be satisfactory in many library departments.

9. There is great variation in local service (sales, maintenance, service) within a single vendor so that the national user surveys may not be of great help in considering this factor. The OA Committee contacted UTK users whenever possible to evaluate Knoxville area service.

10. Many different OA technologies are available or in the planning stages: voice activation (instead of keyboard), receive and send voice messages, image transmission to screen, microformat storage and retrieval. Many of these will be of value to the Library, if we can get started and proliferate OA equipment for professional and support staff.

POTENTIAL LIBRARY APPLICATIONS OF OFFICE AUTOMATION

EM = electronic mail
OA = office automation
PC = personal computer
WP = word processing

TASK (with departmental examples)	DIVISION/ DEPARTMENT	HARDWARE/SOFTWARE REQUIRED
1. Calendar management --maintain individual schedules (ready access, less negotiation for changes) --department calendar, desk schedules, terminal schedules --room, equipment scheduling --committees and other meetings	All	PC with time mgmt. to full OA system with EM
2. Procedures manuals --annual or more frequent revisions --sometimes several in a department: (departmental procedures, student manual in ref. depts., music; project or task procedures such as search services, telephone xerox, song index, recon, GEAC circ or reserve) --Library policies and procedures	All	PC to WP
3. Correspondence --individual letters, envelopes --form letters --tailored form letters --mailing list maintenance --mailing labels --memos --ballots, Library elections --salary notifications (Bus.Off.) --project proposals, projections	All	Software: WP & database mgmt. Some locations: printer with sheet & envelope feeder
Heavy correspondence: Adm., CD (development, acknowledgements), Personnel (recruiting), Serials, Monographs. But Ref. depts. & branches do have periodic major correspondence to academic depts., etc.		
4. Reports Require much editing, many iterations. Need business charts & graphs, ability to maintain & access statistics, manipulate,	All	WP with column math, database mgmt., graphics, shared files

insert in text.
--quarterly, annual reports
individual, department, Library
--annual budget documents
--minutes
--grant applications
--collection development reports,
individual, departmental, library

5.	Committee work --reports: draft to final, route, annotate --access to other library documents	All	Full OA system: shared files, EM, WP, graphics
6.	Professional activities --writing, research --resume maintenance --professional assn. work: planning, correspondence, mailing lists, reports, newsletters	Faculty	WP with column math, database mgmt., graphics
7.	Promotional activities; Publications --draft to final copy at dept. level --ability to send to best available printer --graphics & choice of type fonts --examples: Personnel: Staff Guide (revisions) Spec.Coll: Library Devel. Report Director: Announcements (weekly-varies) Publ.Serv: Library Information Bulletin (quarterly) Library Guides (62 now, average 2 pages, revisions) finding guides (ref.depts.) Library Newsnotes (monthly) Library Resources Bibliographies (ref.depts.) GEAC promotional & educational materials Literary Criticism Guides (UGL Ref., revisions) Library: Library Lectures (every 3 years) Occasional Papers	Director Assoc. Dirs. Public Serv.	Full OA system: shared files, EM, WP, graphics High quality printer; perhaps tied to photo-composition equip
8.	List processing --mailing lists, access, maintenance ADPS: UTK faculty PS Division faculty Libraries in TN, college & univ. libraries, area libraries ADTS: Division/dept. members Committee members (TSAC, etc.) ADCD: Friends & Benefactors Dept. Library Representatives	ALL	WP, database mgmt. List/sorting, online lists could replace paper.

	Fac.Sen. Library Committee		
	Campus Deans & Dept. Hds.		
	Acquisitions Council		
Director:	Library faculty/staff		
	Various distribution lists		
Monographs:	Book dealers & vendors		
	Faculty		
Serials:	Publishers & vendors		
	SHL distribution list		
Ref.Depts:	Faculty from specific acad. depts.		
Personnel:	Staff list (alpha & dept., telephone nos.)		
	Files lists		
	Locker list		
	Fee waiver list		
--information access, local bibliographic control			
Main Ref:	Documents check-in & catalog		
	Lists: newspapers, soil surveys, business dissertations, etc.		
Both ref:	Locator for indexes in ref. room		
	Reference shelf list		
UGL Ref:	Current, local topics in Knoxville papers		
Music:	Dissertations on microfilm, music periodicals, thematic catalog concordances, specialized bibliographies, discograph.		
ADPS:	Faculty studies area--use, authorization		
	UMI Microfilms Project holdings list		
ADTS:	Office files index		
ADCD:	Gift file--donors by category, honorees, memorials (confidential)		
ADAS:	Library committees		
Personnel:	Faculty promotion & tenure list		
Director:	Library Faculty Senators, Lib. Lecture chairs, etc.		
Bibliographic instruction:	bibliographies, handouts		
Nonprint:	Film catalog; Video catalog		
Spec. Coll:	Manuscript guides		
Monographs:	Approval plan profile & all changes (maintain & store)		
	Specialized lists of sources		
10. Statistics		ALL	Column math, screen math, WP
--Maintenance, reporting			
Publ.Serv.:	Circulation stats		
	Reference stats		
Done by GEAC to varying degrees?	Reserve stats		
	Documents circ & ref		
	Shelving		
	Special processing		
	ILS, Nonprint, Spec.Coll.		
Tech.Serv.:	Cataloging volume		
	Acquisition statistics		
Done by GEAC or other automated systems?	Project workload		
	Recon		
	Serials check-in and claims		
	Binding volume		

	Systems:	Project workload	
	CD:	Requests & order stats (daily)	
	Bus.Off.:		
--Questionnaires: preparation, revision data entry & storage, tabulation & analysis.	Personnel:	Staff development activities	WP, Basic
	ADPS:	Library Use Survey	
		UMI Microforms Use	
11. Bookkeeping			Database mgmt. or special software
	ADCD:	Fund endowment ledger (confidential)	
		Daily gift ledger	
	ADTS:	SOLINET invoice running totals (20-25 categories)	
	ADAS:		
	Bus. Off.:		
	Aux. Serv:		
	Monographs:		
	Serials:		
12. Budgeting, financial forecasting			Spreadsheet software (eg, Visicalc Multiplan)
	Adm.:	Library budget	
	Bus.Off.:		
	Personnel:		
	Departments:	Annual budget document	Column math, WP
		Grants management	
13. Forms			
--Generation	Personnel:		
--Fill in	Adm.:	ARL forms, etc.	
	Serials:	reports in specific formats: columns, figures	
		claim forms	
	Monographs:	need ability to tailor & vary claims, requests, etc.	
	Personnel:	activity reports	
		personnel statistics	
		performance evaluation forms	
		post-interview evaluation forms	
--Inventory/supply			

14. Record keeping

Personnel:	Monthly leave records	Read only security
	Biweekly allocations & usage charts	Some confidential.
	Salary adjustments	Math functions
	Longevity records	
	Continuous service records	
	Affirmative action records	
Aux.Serv.:	mail/telephone logs	
Reference:	search services	
Publ.Serv:	money collected, deposited	

15. Inventory

Aux.Serv.:	equipment
	supplies

16. Organization charts

Director:	Library org: division, dept. heads
Depts.:	Positions, staff

17. Position descriptions

Personnel:	Library, campus
	vacancy lists
	professional vacancy announcements
Depts:	specific to dept.

18. Interface with database searching

Reference:	format search in PC and transfer
	download results to resort offline
	--better control over results with less cost
	--compare results from diff. databases to remove duplicates
	easy copies of downloaded results

GENERAL IMPACT

--Better organization of personal files should improve time utilization.

--Favorable impact on quality. Some errors, lack of preciseness, etc. are ignored now because of time required to improve using manual methods.

Preliminary Evaluation of Word Processing Requirements for the Emory General Libraries

by

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SCOPE OF THE EVALUATION

This evaluation was undertaken at the request of the Director of General Libraries to evaluate the current and future need for word processing within the Emory General Libraries. It must be understood that this report is the result of informal interviews with the managers and supervisors of units within the General Libraries and does not represent detailed systems analysis of the libraries word processing requirements. The purpose of this report is two fold, (1) to outline in general terms the current status of work that might be affected by the introduction of word processing and (2) propose a course of action for the systematic implementation and efficient utilization of word processing in the Emory General Libraries.

EXECUTIVE SUMMARY

With the purchase of several micro-computers by the Emory General Libraries and the availability of inexpensive word processing software the implementation of word processing has become a practical reality. There is little question among staff and management regarding the advantages to be gained by the introduction of word processing to work patterns with the General Libraries. The results of theinterviews clearly indicate that the introduction of word processing would not only improve productivity but would also make possible the undertaking of important work that would otherwise remain undone. The question, then, seems to be not should the libraries introduce word processing but how to best go about it.

Based on the results of this evaluation, the current availability of hardware and software, and the uncertain direction of future library automation the following recommendations are made:

1. At least four word processing stations should be established to fully satisfy current word processing needs. These stations should be in the following locations:

   a. one terminal located in Special Collections.
   b. one terminal located in Technical Services.
   c. one terminal located in Science Department.
   d. one terminal located in Candler Library.

2. Currently all the personnel assigned to word processing activities work only in the mornings. To more evenly distribute word processing activities over the work day efforts should be made to adjust their work periods so that the computers will be used both in morning and afternoons.

3. There are currently several word processing packages installed on micros at the Library. They are WORDSTAR, EASYWRITER, and APPLE WRITER. One standard software package should be adopted for use throughout the libraries.

4. Administrative proceedures for the future handling of files that are "word processed" need to be established now. This includes working out procedures for handling and storage of diskettes as well as cataloging and indexing the work contained on them. This activity could be undertaken by the two supervisors assigned to word processing with guidance from the staff of the Directors Office. Classes are also available that would be helpful.

5. The professional staff of each department, especially interested department directors, should be encouraged to both learn word processing (WordStar) and to find ways to incorporate it into their work. Word processing should be viewed as a tool for improving the productivity of not only general staff but professional staff as well.

Introduction of the use of word processing to the Woodruff Library holds a great deal of promise not only for the ehnacement of productivity but for improving morale as well. There is a great deal of exicitement among general and professional staff over the prospect of using a computer. There are also some misgivings and confusion about how word processing should be used. Supervisors are concerned about determining what is

appropriate for word processing and that they could be left behind as general staff gains new skills and knowledge. In short, the potential is real for word processing to create more problems that it solves. The Directors Office should continue to provide support in the form of training, orientation, and guidance. Careful attention to these issues will in large measure effect the smooth transition to word processing into the everyday work flow of the General Libraries.

RECOMMENDATIONS

OF THE

TASK FORCE ON THE USE OF

MICROCOMPUTERS AND WORD PROCESSORS IN THE

MIT LIBRARIES

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September 12, 1983

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NOT INCLUDED IN KIT

Introduction

In April 1983, the Library Administration appointed the Task Force on the Use of Microcomputers and Word Processors in the MIT Libraries. The charge to this Task Force was to analyze Library needs and to determine potential areas where microcomputer technology might be a feasible response to budget reduction pressures. In addition to the consideration of appropriate microcomputer applications in the Libraries, the Task Force was to recommend hardware and software in a configuration based on needs, budget, and decentralized usage.

Many members of the Task Force were complete novices in the field of microcomputers and the first step for most was to do a great deal of background reading. Task Force members attended both the Applefest Computer Show and the Computer Showcase Expo. Informal subgroups visited the IBM Product Center in Boston, the Harvest Computer Store in Cambridge, and Printer Port in Dedham. On June 6, Shirley Baker attended a Task Force meeting to discuss the GEAC automated circulation system and its relationship to microcomputer applications. Other committee meetings were held with Linda Crawford, Digital Equipment Corporation sales representative and David McKean, IBM sales representative at MIT. The Task Force met with Steering Committee in early July to report on its progress to-date.

The first month proved to be an intensive learning experience for each member of the group. At the same time each person was interviewing one or more library units to learn what the staff members were hoping to accomplish with the use of microcomputer technology.

Applications

Lists of potential applications for microcomputer/printer installations were requested from individual units of the Library system. Brainstorming sessions or meetings of ad hoc discussion groups were held in the units and their lists were submitted for discussion by the Task Force. The lists are presented as Appendix A as received, in order to reflect without editing the wide variety of suggested uses. They do include, therefore, applications which were later determined not to be viable because there will exist no intra- or inter-networking capability at this time, no hook-up to the GEAC circulation system, limited memory capacity, and in several instances, current or future availability of data from other systems.

Following are some suggested applications which fall generally into four categories:

Word Processing

Correspondence including form letters; policy/procedure documentation; language expertise lists; mailing lists; library guides and bibliographies; staff directories; new acquisitions lists.

File Management

Government document retention schedules; record management schedules; donor files; library literature routing list; combined index to AACR2, OCLC, NELINET; Catalog Service Bulletin and MIT local policy statements; local document item number file; donor list; college catalogue roster; periodical abbreviation list.

Statistical analysis

Monthly/annual production statistics; monograph receipts statistics; form inventory; supply inventory.

Calendar Management

Staff calendar coordination; reference desk schedules; vacation lists; meeting room schedules; task force and ad hoc committee meeting schedules.

In the process of evaluating the wide range of possible applications, many important guidelines were formulated; the most important being that the benefits be immediate and practical. While the educational value of working with microcomputers is without question, the primary goal of their installation is to maximize effective use of time and expedite on-going operations, realizing quick financial returns. The re-working of data supplied by Administrative Services, such as student payroll, operating expense accounts, and commitments would be unacceptable.

Proposed Locations for Microcomputers

Because the proposed budget for this first purchase of microcomputers for the Libraries is large enough to allow for immediate installation of microcomputers in only eight or nine locations, the Task Force prepared a list of proposed locations in priority order. If funds are provided for microcomputers next year, as expected, it seems likely that the rest of the units deemed appropriate as candidates could receive equipment at that time.

The list was based on such factors as anticipated applications put forward by the unit, potential for sharing between units, and geographical distribution of hardware. Although every unit will not receive a microcomputer, the Task Force encourages that as many staff members as possible receive an opportunity to try out the equipment as soon as possible.

The following Library units were eliminated from current consideration for the reasons given:

1. Administrative Services - already has microcomputer
2. Chemistry Reading Room - staffed extremely limited hours, with no support staff; part-time librarian could have access to Divisonal Library equipment
3. Circulation Department, Hayden - automated circulation system pending
4. CLSS - computer to replace dumb terminal is expected through another channel
5. Microreproduction Laboratory - already has microcomputer
6. Reserve Book Room - automated circulation system pending
7. Rotch Library Visual Collections - can share with Rotch Library for small projects; cataloguing slides needs capability larger than that of microcomputer

Following is a list showing the proposed locations in priority order and commentary by the Task Force. The Task Force recommends that, in some cases, a Branch Library receive full use of individual equiment while two Departments or two Divisional Libraries will share a system. Well defined applications and time restrictions of a small staff justify this recommendation.

1. Acquisitions and Catalogue Departments - shared
2. Barker Engineering Library
3. Dewey Library
4. Rotch Library
5. Institute Archives and Special Collections
6. Humanities and Science Libraries - shared
7. Lindgren Library
8. Music Library
9. Director's Office
10. Humanities Library
11. Aeronautics and Astronautics Library
12. Catalogue Department
13. Industrial Relations Collection
14. MIT Museum
15. Schering-Plough Library
16. Student Center Library
17. Resource Sharing Center

1. Acquisitions and Catalogue Departments - shared

The physical proximity of these Departments makes sharing feasible, at least as a start until quantity of applications requires additional equipment. The size of the Departments and the volume of processing and administrative tasks places them first on the Task Force's list. The Acquisitions Department would reap benefits from microcomputer equipment especially in the following areas: manual production and update, statistics, scheduling, and claiming letters. The Catalogue Department's heavy reliance on procedural manuals which need frequent updating and indexing makes it a very good candidate for early receipt of microcomputer equipment. A control system for Pre-cat materials, Kardex notifications, statistics, and scheduling are among other tasks that would be facilitated by microcomputers. Near letter-quality dot matrix printer is recommended for this location.

2. Barker Engineering Library
3. Dewey Library
4. Rotch Library

These three Divisional Libraries rank close together. They all have administrative and processing tasks that would be made more efficient with microcomputers; they are geographically far enough apart to make sharing unfeasible. Moreover, they each have Branch Libraries under their jurisdiction which could make some preliminary use of the divisional equipment until the next round of purchases. Letter-quality printers are recommended for Barker and Dewey, which publish bulletins. A near letter-quality printer is recommended for Rotch.

5. Institute Archives and Special Collections

Institute Archives appears high on the list especially because of its very heavy load of word processing generated by grant proposal activity and production of other reports. Institute Archives also expects to use the equipment for accessioning and processing information, location files, and statistics. Letter-quality printer is recommended given volume of material going outside MIT.

6. Humanities and Science Libraries - shared

The physical proximity of these libraries makes sharing feasible, at least as a start. Both libraries produce lists of recent acquisitions or other local library user aides and would benefit from assistance in sending letters to faculty. Near letter-quality printer is recommended because of proximity to letter quality printers in the Institute Archives and the Director's Office for occasional time sharing.

7. Lindgren Library

As a Branch Library Lindgren has a small staff who may leave the Library relatively infrequently, especially for the amount of time needed to become familiar with the microcomputer and to effect the required implementation of programs.

Lindgren has outlined several useful applications: e.g., a computerized ready reference card index to help with frequently-asked questions (by subject headings with cross references, increased access which could be facilitated by microcomputer), word processing to aid with compilation of bibliographies and new book lists; mail-merge capability to assist with mailings. Near letter-quality dot matrix printer is recommended.

8. Music Library

Particular use could be made of microcomputer file management capability in this library, with the large music publishers' address and catalogue files, index to record manufacturers' labels, and several other lists. The Library also produces a regular newsletter and uses form letters frequently. The Librarian is knowledgeable in computer use so that installation of microcomputer equipment here is expected to produce rapid results. Music appears eighth rather than seventh on the list because of proximity to equipment in Building 14. Near letter-quality dot matrix printer is recommended.

9. Director's Office

The Director's Office needs fall heavily into the area of word processing. The Office appears no higher on the list because some of these needs are already at least partially handled by electronic typewriters, which may not be sufficient to edit long documents but which relieve enormously the burden of form letters and can handle small word processing tasks. We anticipate that data management needs could be handled at first by the Administrative Services microcomputer. Letter-quality printer is recommended given volume of material going outside MIT.

The needs of the following units are similar to those expressed above and in the appendices; it is assumed that the units would receive equipment in the next round of purchases. Humanities, if it has in fact been sharing equipment as suggested in the report, would be ready for a microcomputer devoted to its own uses, especially in development of reference files. Both Humanities and Science are interested in this function which neither could do effectively while sharing equipment. Aeronautics, with its small staff, could reserve some hours for training with Barker's equipment during the first year and then launch into its own computer. The Catalogue Department, if it has been sharing equipment as suggested, could receive its own computer in the second round and increase applications. Until the second round, it is believed that Industrial Relations can share Dewey Library's equipment; moreover, IR already has access to the MIT Industrial Relation Section's equipment. The Museum already has a microcomputer; the committee believes, therefore, that additional equipment should wait until the other units receive theirs, although expanded capabilities would be desirable. The last three appear in their positions because staffing patterns and roles of the units are not yet completely defined.

10. Humanities Library
11. Aeronautics and Astronautics Library
12. Catalogue Department
13. Industrial Relations Collections
14. MIT Museum
15. Schering-Plough Library
16. Student Center Library
17. Resource Sharing Center

Software

In the process for buying a microcomputer all authorities agree that the software selection be made before the hardware is chosen. It is encouraging that software availability for the Libraries' applications does not appear to be a problem. After analyzing the applications the Task Force concluded that word processing, data base management and spreadsheet software packages would initially be the most useful for the Libraries. Many good packages are available on both the DOS (IBM) and CP/M (DEC) operating systems. It would be a long process to evaluate each one and make a final recommendation. If there is expertise with a particular word processing package in any of the units that runs on DOS (IBM), the Task Force encourages that it be purchased to expedite the training period. There is, however, a self-taught tutorial available on most software packages.

Because the software market is changing rapidly the Task Force recommends that while waiting for delivery, each unit evaluate its needs and recommend two packages to purchase for start-up. Two excellent sources for evaluation of new software are "Small Computers in Libraries" and "PC World". Delivery of software is approximately two weeks whether purchased through a catalogue/discount house or from a local firm. Given price changes from week to week, a centralized co-ordinating effort, perhaps by Administrative Services, may benefit the system with a further discount.

Following are some of the software packages recommended for consideration.

Word Processing

1. Word Star - most sophisticated, highly used, most expensive
2. Volkswriter - purchased by Administrative Services. Recommended by a consultant for New England Life Insurance Company who evaluated it along with eleven other word processing packages including Wordstar. Reasonably priced.
3. Easy Writer
4. Multi-Mate - New, reviewed in September issue of "PC World;" the only program available on a PC that formats as you input, similar to a word processor.

Data Base Management

1. dBase II - purchased by Administrative Services
2. DB Master
3. VisiCalc
4. Lotus 1-2-3 - purchased by Administrative Services. This program is the wave of the future. It integrates several programs into one; spreadsheet analysis, data base management, graphs, report generation, limited word processing, file management, translation of files from one format to another, and text and graphics printing.

The above programs all have tutorials which require a time commitment to learn but do not require outside training. Because there are no Library funds for training this is an extremely important consideration.

The Task Force strongly suggests that a software library be established within the system to enhance the sharing of software packages used occasionally. After the initial expenditure for software, which the Task Force has provided for in its budget, each Library will have to purchase additional software from its own budget. The software library would aid in eliminating the need for duplication.

Hardware

After the initial educational process, the Task Force focused its attention on identifying which type of hardware to recommend to Steering Committee. The group became familiar with the microcomputers available and began to evaluate them more carefully with emphasis on the software they could run, their compatibility with other hardware and, of course, price.

The issuse of software was of particular concern as the Libraries have not yet identified specific programs they will use. A configuration was sought, therefore, that would lend itself not only to word processing, which all units can use now, but also to a variety of database management packages and spread sheet applications which the Libraries may use in the future. In addition, after analyzing the Libraries' applications, the Task Group determined that a 128K memory and two disk drives were essential requirements for any microcomputer it recommended.

For these reasons the Task Force eventually identified IBM and DEC as the two most likely microcomputers for the Libraries. Demonstrations of both the IBM PC and the DEC Rainbow clarified the comparative capabilities of each, the service and support available and, finally, the cost of various configurations. The Task Force recommends the Libraries purchase the IBM PC.

	IBM PC	DEC Rainbow
1. Memory	Greater potential expansion	
2. Ports(to add equipment and memory, hard disk)	5 (can choose additions)	3 (additons specified)
3. Hardware compatibility	Most hardware produced by other companies compatibile with IBM	DEC products not as compatible with non-DEC products

	IBM PC	DEC Rainbow
4. Software compatibility	Over 1,000 programs now available, more expected as IBM PC expected to take 50% of market	500 DEC programs. Can use non-DEC programs with some manipulation
5. Cost of service	$275 carry-in from Neeco of Needham	$276 carry-in from DEC at MIT
6. Cost of Unit*	$2,606 with MIT 30% discount	$2,713 (plus $100 to make compatible with parallel printer with MIT 32% discount
7. Delivery	2.5-3 months**	2 weeks

*Price includes cost of CPU, memory, two disk drives and monitor only.

**Although IBM will not guarantee delivery in less than 9 months through MIT, the delivery date quoted by the MIT Purchasing Office is 2.5-3 months.

Sears, Roebuck, IBM Office Products Center and Neeco are all possible vendors who offer a 20% standard educational discount for the IBM PC.

Printers

Although IBM offers several (non-IBM) printers with its hardware, after examining the capabilities of other printers, the Task Force does not recommend either the Epson dot matrix or NEC Spinwriter for the Libraries. Despite the price discount available through IBM, other printers on the market better suit the Libraries' requirements.

The Task Force recommends two types of printers for the Libraries: a dot matrix capable of considerable speed, for drafts and in-house correspondence; and a slower, letter-quality printer for reports and non-Library correspondence.

1. Okidata Microline 92

This printer produces draft quality dot matrix print at 160 cps and has a second, near-letter quality mode at 40 cps. Produced by a companywhich specializes in printers, the Okidata has so far proven reliable and versatile and is electronically compatible with the IBM PC as a parallel printer. Its price is extremely low in comparison with other printers of the same capability. The Okidata is available from both Printer Port* of Dedham and the Computer Store for $595 plus $50 for tractor feed.

2. C. ITOH Starwriter

This printer produces letter quality correspondence at 40 cps and is a reliable medium use printer (5 hours per day). It is recommended over the similarly priced, slower daisywheels and is electronically compatible with the IBM. The price is $1,300 plus $275 for tractor feed from Printer Port of Dedham, and $1,525 plus $260 for tractor feed from the Computer Store.

* Printer Port does not accept purchase orders. MIT's Purchasing Office does not approve of paying in advance and has suggested the Computer Store as an alternative vendor.

Conclusion

After reviewing the current literature the Task Force concluded that the IBM PC has become the microcomputer of the library profession. The recent development of the OCLC Micro Enhancer will allow micros to use all of the OCLC subsystem as well as facilitating and streamlining the use of the ILL Subsystem. This software package should be available for IBM PC's in the Fall. Where as the Apple has been the microcomputer for public libraries, the IBM will be the microcomputer for academic libraries. Its storage capacity and software availability are factors that have determined the recommendation of the Task Force.

Although the work of this Task Force is now completed, the committee recommends the formation of a Users Group to build system awareness, share application experience and encourage the development of computer technology in the MIT Libraries.

APPENDIX A

LISTS BY LIBRARY UNIT

OF POTENTIAL APPLICATION FOR MICROCOMPUTERS

IN THE

M.I.T. LIBRARIES

15-76

TO: Task Force on Microcumputers and Word Processors

FROM: Laura L. Torres

SUBJECT: Suggestions for use of Microcomputer and Word Processor in the Acquisitions Department

Payroll
Student training manual
Pre-Order Search Manual
S& J Procedure Manual
Monographs Section Manual
Payroll
Student Scheduling
Acquisitions Department Daily routines
Staff Scheduling - meetings - General Calendar: Vacations, etc.
Statistics: Monthly & Quarterly reports
0255 Gov't docs. items number file
Acq. Department supplies control
Binding records
M.I.T. Technical Reports Publication List

E&G Mailing List & Mailing labels
Up-date procedure manual
List of publications ready for Exchange
Claim letters
General Correspondence
E&G Section: Letters to faculty, hand-outs, telephone directory files & general address file; list of acquisitions and general conferences.

APPLICATIONS
MICROCOMPUTERS IN DIRECTOR'S OFFICE 6/1/83 M. Miller

Word Processing

1. Routine correspondence, including form letters
2. Reports
* 3. Annual Report Donor List
* 4. Annual Report Staff Activities
* 5. Alphabetical staff directory
6. File headings lists
7. Mailing lists/labels
8. Job list with descriptions
9. Recruitment update grid
10. LibNotes positions list
11. LibNotes Calendar
12. Committee list with meeting times
13. Oft-called telephone numbers
14. Language-expertise list
15. Phi Beta Kappa dues list
16. Serials in MIT Libraries mailing list
17. Library guides

File Management

1. Index to LibNotes
2. Index to LibCouncil minutes
3. Requisition control
4. Ready reference file, oft-asked questions
5. Procedures list with text, name of person responsible
6. P-card renewals

Calculation

1. Annual Report statistics
2. Accessions/holdings lists
3. Guide inventory
4. Supply inventory

Time Management

1. LibConfRm schedule
2. Office calendar coordination

*These and perhaps other items under Word Processing ~~(or portions of items)~~ may be more appropriately performed by File Management. It might be useful to have both a word processing package and a file management one, but word processing itself would be an effective start.

MEMO TO: MICROCOMPUTERS TASK FORCE

FROM: DW

DATE: MAY 2, 1983.

RE: INITIAL INTERVIEWS WITH STAFF AT ARCHIVES AND MUSEUM

ARCHIVES

The Archives looks forward to setting up an automated system which will, at best, accomplish the following: maintain accessioning and processing information, records management schedules, location files (a complex system for material which is constantly being moved), donor files, and statistics for the annual report and in-house use. The Archives also would like to use the computer system for maintaining financial records, which will be especially useful with the decentralization of student employment in the Libraries. The Archives is also very anxious to have a word-processing capability with its automated system.

Because the Archives is committed to contributing its cataloging information to OCLC when the manuscript format is ready, and because all the Archives cataloging is unique and the information maintained for each collection different from that for books, the Archives is concerned with the issue of formats available from any system it becomes associated with. To simplify: The Archives must report to OCLC. However, the OCLC format as envisioned does not offer the Archives a format which includes all the accessioning and processing information it needs to keep for each collection. RLG does. If the Archives is able in any way to cooperate with RLG, it is likely that it will need somewhat less from its computer system. If the Archives is not able to tie into RLG, the microcomputer system will have to do a lot more to meet its basic housekeeping needs. At any rate, the Archives is looking forward to having a microcomputer with word-processing application and is anxious to work with the Libraries to meet this goal. An automated system will greatly relieve the heavy workload on the permanent staff (4 professionals and 2 support).

THE MUSEUM

The Museum at present has a computer - a Zenith Z-89, for the Hart Nautical collection. After the Nabisco move the computer will move to the museum with the Hart Nautical collection, but it does not have the capacity at present to help with general Museum work.

The Museum is very anxious to expand its automation system. Warren Seamans estimates that the cost of typesetting for exhibit materials alone in one year could pay for a microcomputer ($3000). In addition, other word-processing needs

the Museum's heavy correspondence, labels for exhibits, etc. The Museum's collections of architectural drawings, the Draper Instrument collection, the general instrument collection, and the huge photograph and central files are all organized and prepared for automated cataloging. The Museum would also keep its extensive donor files on the computer.

The Museum at present is short-staffed and falling behind, particularly in the area of daily correspondence. The staff assistant spends nearly onethird her time on routine correspondence. Much time is spent writing and editing exhibit texts. A word-processor would greatly simplify the work at the Museum; a microcomputer would enable the Museum to catalog its unique collections properly and make them far more accessible to the staff and patrons alike.

CONCLUSIONS

The staffs at both the Archives and Museum both seem very clear about what they believe an automated system could accomplish for them. They are not totally clear on what equipment they might need and precisely what it could do for them - information it seems to me we need to acquire. Both staffs also see a range of options available to them, depending on funds allocated and other decisions made (for example, the RLG issue for the Archives). Both staffs are anxious to work with the Task Force to help see their needs are met where possible.

Applications for Microcomputers - Catalogue Dept.

1. Combined index to: AACR2 Implementation statement
   CSB rule interpretations
   OCLC technical bulletins
   Nelinet technical memorandum
   M.I.T. local policy
2. S/J... Replace manual records/files
   See references input
   AACR2 Kardex notification - in process file
   Control file for problems
3. Word processing
   Cataloguing routines
   Orientation/training documentation for staff, students, filing
4. Loading OCLC control #'s for CIP records to re-search instead of present enhancement by cataloguer; interim search by student assistants.
5. Pre-cat monthly statistics.
6. Monthly/annual production statistics.
7. Receipt statistics of titles received for cataloguing - by Divisional/ Branch Library.
8. Calendar management - schedule meetings for Team, ad hoc committees, Sections.
9. Librarian staff absence record.
10. Student payroll and scheduling.
11. Form control - schedule re-order.
12. Supplies control.
13. Budget control - over the year.
14. Purchases control.
15. Series Authority File.
16. Interface with circulation.
17. Repeat notices.
18. Circulation of library professional literature.

May 5, 1983

TO: Task Force on Microcomputers and Word Processors

FROM: Ellen McDonald

SUBJECT: Applications of Microcomputers in Dewey Library

The structure of Dewey Library is such that there exist three processing units which to a large degree operate autonomously: Industrial Relations, Controlled Access and the general collection technical processing. Because of this, the potential for reducing the duplication of effort and integrating systems control through the use of microcomputers is great.

Without regard for the limitations this "trial run" with microcomputers might have, I asked each section what tasks they felt could be expedited and performed more efficiently. Many of the responses necessitate either intra-library or inter-library networking of the microcomputers and not being certain of the long-term plans, I have made no effort to sort these out.

Administrative Office

payroll
student scheduling
working paper collection
acquisitions list
budget/ projections
Frost and Sullivan index
library directory
student training manuals
ordering supplies
electronic messages

Technical Processing

updating shelflist
serials precats
discards/ basement collection
procedure manual
item number file (gov't docs)
class list (gov't docs)

Circulation

daily statistics
overdue notices
bookkeeping
reserved book notices

Collections

order processing
reference guides and bibliographies
library schedule
acquisition lists
electronic messages
book budgeting

Controlled Access

journal list
computer manuals list
procedure sheet
student schedules
letters to faculty
statistics
ordering supplies
accounts/ fines
class lists

Industrial Relations

I.R. Library Acq. Bulletin (LAB)
ordering
budgeting
journals list (not in S & J)
union newspapers index
local statistics
LAB survey
uncat pamphlets (2,000+)

SUGGESTIONS FOR USE OF MICROCOMPUTER
AND WORD PROCESSOR IN THE
ENGINEERING LIBRARIES

Processing check-in
journals
serials

Any "dated for review" items
journal reviews GPO
order chrono-dex

Processing file (we keep series by both title and call no.)

Generate claims

Keep track of reader requests

Binding records

"No" file

Cancelled order file

Technical reports catalogue (see attached page), and/or authority file

Word processing: the Barker Engineering Library Bulletin, form letters, lists of addresses, supply orders, and use to generate a list by IEEE order nos. (CHO).

M.I.T. Reports- check-in, claim and use as record of non-receipt, i.e., classified, reprint, etc.

Track the processing of TR's, and generate records

Reference Office journals routing

Maps

APPLICATION OF MICROCOMPUTER IN THE MSA

Due to the limitations of the number of bytes in a microcomputer, it would be inadequate to store the technical report catalog and authority on-line. Estimtated number of entries world be 242,025, adding approximately 12, 600 entries* per year.

Alternatives world be to place a shelf-list (NTIS accession number and SUDOC number on-line and to use our new "ready reference" for other access points, i.e., author/title/organization report number. This shelf-list would be an estimated 73,050 entries,** and would grow approximately 4,200 entries per year.

Placing the shelf-list on-line would eliminate typing of cards, duplication and filing of cards. Essentially the technical report catalog would be nonexistent except for a few miscellaneous reports received directly from organizations. The authority file would also be eliminated. A COM (Computer Generated Microfiche) could be produced using the Information Processing System at M.I.T. This would allow users to check our holding after hours.

Disadvantages to this system are its access limitations; the NTIS database is ofter inconsistent and when a search is done the entire NTIS holdings are searched as opposed to M.I.T. holdings, only.

Other uses of a microcomputer in the MSA would be as a word professor, compiling the Barker Engineering Bulletin and maintaining the billing and mailing lists/ It presently takes 6 manhours per week to type the Bulletin, plus the cost of reducing the original at Graphic Arts. An on-line catalog of videotapes containing the author/title/call no. or course number would be of great use, for quick reference questions concerning our holdings.

A second alternative would be for Barker to purchase MARC tapes of reports received on the NTIS SRIM program. These tapes could be loaded into the Honeywell or IBM mainframe computer here at M.I.T.'s IPS. This would give us full subject access to repots held only at Barker and a chance to make some money providing a search and document delivery package. Again we would gain a word processor for the Bulletin and have all the other features of a microcomputer. A draft exploring this concept was sent to SKN in Jan. 1983.

*entries being approximately 25-30 characters
**entries here being restricted to 13 characters

HUMANITIES LIBRARY

Microcomputers--potential Uses

-Where will the money for training come from??

-The physical location of the microcomputer will partly determine the use. (If the Humanities Library must share a micro computer with Science Library or with Music Library, the use thereof may be different than if Humanities Library has a microcomputer all its own)

1. Potential for ILL interface with OCLC for statistical purposes
2. Word processing; letters to faculty, Anhual reports, hand-outs, guides to libraries.
3. PIN files (Publications In the News), Reference files, college catalogue files, telephone directory files
4. Accounting by subject of books, standing order files bindary files
5. Recent acquistions lists, M.I.T. reports, MIT. conferences

MICROCOMPUTERS IN LINDGREN?

5/2/83
M. Miller

"Crib Card"

Card index to help with frequently asked reference questions. Consist of subject headings with a sentence to a paragraph of alphanumeric information.

Useful to have more cross references.

Bibliographies
Start to compile; alphabetize later or sort by sub-subject

Journal Abbreviation List

Mailing New Book List
Need sorts by floor, e.g. About 150 addresses, needing updating

File Heading List
With cross references, suggestions of what is filed under each.

Reserve List
Sort by course, faculty member

Decision file for Journals

Usage of 750 Journal Subscriptions
Could this come out of the Faxon project?

Vacation Lists

Map File
10,000 records--too big a project involving cataloguing?

AERO?

Technical Report and Society Paper processing
Accession numbers assigned and card sets produced (now MRL) 50/month
(reports should be findable by MIT, NASA, A number

Mailing list for requests for publications.

Card file for reserve list (no. copies, where in system, call no., course no.)

USES FOR A MICROCOMPUTER IN THE MUSIC LIBRARY - May 4, 1983

1. Money related uses

supplies commitments and expenditures
acquisitions budget statistics by format, subject, country of imprint
student payroll
binding budget

2. Selection/Acquisitions related uses

music publishers' address file with current agents (approx. 1,750 index cards)
music publishers' catalogs index and holdings record (approx. 1,750 cards)
record publishers' catalogs index and holdings record (approx. 150 catalogs)
index to record manufacturers' labels for anthologies in the library (approx. 2,000 slips in file)
desiderata file (600 titles)
items on OP search, needed for reserve, reader requests, important reference titles, etc. (150 orders)
list of serials to order when funds available and serials to cancel if continuing to be inactive (25 titles)
acquisitions list (125-150 titles)
serials updates to various union lists of the Boston Area Music Libraries (25 titles)
Boston Composers Project updates (50-100)

3. Administrative/Clerical uses

student schedules (20 students)
newsletter (3-4 issues per year)
form letters (6 frequently used)
annual report, including regular accumulation of ideas for the actual writing process
list of multiple copies used for teaching purposes (150 titles)

4. Technical services related uses

list of items to repair when time and money available (75 items)
access list to the cassette collection which circulates (100 titles)
song index to Schubert recordings (1,000 songs)
list of journals in the Music Library - current and inactive (150 titles)
list of donors (25 names, plus statistics on gifts)

The Libraries
Massachusetts Institute of Technology
Cambridge, Massachusetts, 02139

Rotch Library Visual Collections
Louis Skidmore Room
Room 7-304

2 May 1983

Microcomputer Uses in Rotch Library	Number of Records
Pamphlets cataloging	
Rotch has currently about 14,000 pamplets; adds 1,000 per year 75% are planning reports. These are catalogued in-house with cards put into the collection. They could be cat. on an inhouse database & lists generated. Linked to vertical file in RVC.	14,000 + 1,000/y
Non-standing order Serials File	
quarterlies and annuals. tagged for ordering when due	200-250
Serials Decision File	
record of evaluations, decisions + status	1100 titles
Yellow Periodicals & Title Cats.File	50-60 titles
record of locally (pam) cat. joirnals & the title cat., evaluate after 1 year locally received	12, 1983+ currer
Card Cat. Problems File	
for cards. Keep track of queries referred to 14E-210 regarding cataloging, while leaving cards in the public cat. includes reclass project titles & Khan, mono. & serials.	1200 (100/month)
Withdrawn Books List	
record of titles & call nos for books waiting to be withdrawn. Lacklog.	7-800
Planning Reports Lists	
Planning reports are both fully cat & pam cat. Could be drawn together by place, keywd.-e.g. housing report, envir. impact types, corporate author.,etc.	15,000 add 12-1300/yr

Microcomputer Uses in Rotch Library, cont.	Number of Records
Working Papers File	
List by several entries	200-300
Maps Index	
by place, time, type etc.	500
Acquisitions List	
Journals LIst by country of publ.	
Faculty Publications List	
Guidebooks by subject List	
Theses Access.	
Improve control & theses by listing by subject/advisor/name/year/title/location	4000 items 500 = latest 10 years
Keep track of difficult Info. to find	
identify exhibitions, conferences information facts & figs. about Rotch Lib. in-house manuals RSC periodicals lists submissions to DUSP news & Lib. notes.	
Gifts Record & Status File	
record of donor/titles/amount/date/disposition to date.	100 records
Microform Index	100 to 1000 depending on depth.
record of coverage on fiche & film of microform collections	
Supplies Budget	
in-house record of commitments by type will show annual profile of kinds of exp.	250 20-25/month
College Catalogues Roster	150-200
ordered, received, esp.useful with label printer	
Mass. Citites & Towns Annual Reports	have 15-20 linear ft/ add about 120 annually
list by several ways,	

Publishers Address file / by country -

The Libraries
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

Office of the Director
Room 14S-216
(617) 253-5651

Policy on staff use of microcomputers

Microcomputers will be assigned to library units according to the following criteria:

1) quick returns on investments,
2) time saved on ongoing operations,
3) utility for a variety of operations, and
4) amount of staff time saved.

In order to accomplish stated goals, in-house programming will not be allowed, games may be played only to familiarize staff with machinery (not for recreation) and micros will not be used for personal computing or experimentation. Training will be conducted through the use of appropriate manuals with the support of more knowledgeable staff.

Approved by Library Council 1/4/84
Approved by JKL 2/9/84

Policy on the Use of Microcomputers in the National Library

Background

The use of microcomputers by managers at all levels in organizations is expected to grow while at the same time, central data processing facilities in the same organizations are experiencing development backlogs. It has become evident that the problems associated with the uncontrolled acquisition and use of microcomputers require that a balance be maintained between the flexibility afforded to individual managers in solving urgent operational requirements through the use of these affordable devices and the long term strategies and control necessary for corporate data management.

In October 1982, the ad hoc Sub-Committee on Microcomputers was established by the Committee on Automation with the objective of examining the use of microcomputers within a National Library local area network. The Sub-Committee, which met three times between November, 1982 and February, 1983, was composed of representatives of the operating Branches, Networks and FLLO.

The terms of reference of the Sub-Committee were to develop and recommend to the Committee on Automation an appropriate policy and requisite standards for the acquisition and use of microcomputers in the National Library.

The work of the Sub-Committee was directed to both the short and long term use of microcomputers in a distributed processing environment. The role of LSC within the context of the Information Centre concept was also examined.

Policy

1. General Guidelines

   1.1 That the National Library should set up, as soon as resources permit a microcomputer hardware/software support group in LSC to ensure that adequate microcomputer expertise is available.

   1.2 That an inventory of hardware and software held in NL be maintained by the NL EDP coordinator. This information is required for the ITSP report. The inventory should also indicate the hardware on which the software can run.

   1.3 That Assistant Directors (Systems) coordinate microcomputer applications at the Branch level.

1.4 That a standing sub-committee reporting to the Committee on Automation be established to develop long term strategy and guidelines for coordinating, department-wide, microcomputer, word processing and office automation projects in NL. Membership need not be restricted to Assistant Directors (Systems); for example, the Coordinator of Word Processing for NL should be part of this sub-committee.

2. Specific Short Term Guidelines

(These are short-term pending further guidelines and a long term strategy to be prepared by the standing committee (see item 1.4).

2.1 That managers focus on microcomputer applications where there is a high probability of positive return or benefit during the initial one to three year period, with minimal start-up cost and effort.

2.2 That the general criteria for the short-term use of microcomputers suggested in 2.1 above are as follows:

2.2.1 In the acquisition of microcomputer hardware and software, managers should seek advice and guidance from the sub-committee referred to above and such other expertise that may be available if the initial outlay is expected to exceed $15,000 or if the application clearly affects other branches.

2.2.2 That managers keep the departmental EDP coordinator (L. Forget or his delegate W. Newman) informed of plans to purchase microcomputer hardware and software since the coordinator's approval is needed for acquisition purposes and since costs must be included in the ITSP report.

2.2.3 That applications involving the creating and processing of bibliographic data be limited to small scale projects or experiments affording an opportunity to learn about the capabilities of microcomputer hardware or software.

2.2.4 That applications be limited mainly to use within branches at least until further mechanisms and guidelines are proposed by the standing sub-committee.

2.2.5 That Branches consider application systems and operating systems that would facilitate the upward migration of data bases.

2.2.6 That Branches be encouraged to take advantage wherever possible of the capabilities of systems now in use in the Branches such as word processors and the financial system (FACS), in lieu of acquiring new hardware and software.

2.2.7 That the Library Systems Centre, given available resources, cannot reasonably be expected to provide substantive support for short term micro-based applications.

2.2.8 That the desirable general criteria suggested for short term acquisitions of microcomputers are as follows:

- the availability of packaged software (see 2.2.7)
- 16 bit architecture
- standard operating systems
  (e.g., MS/DOS, CP/M-86, UNIX, etc.)
- telecommunication capabilities
  (e.g., modems)

Approved by the NLC
Executive Committee on
April 27, 1983

GUIDELINES FOR IBM PERSONAL COMPUTER AND XEROX MEMORYWRITER USE

1. TYPE OF USE * Any member of the staff is eligible to use the IBM Personal Computer or Xerox Memorywriter. Staff members are encouraged to familiarize themselves with this equipment and use it. Preference will not be given to any specific type of use (for example, library production work versus learning to use the computer).

2. SIGN-UP * Users should sign up to use the equipment. A sign-up sheet is kept outside Room 367. Sign-up sheets are posted on Wednesdays at 8 a.m. for the following week. Users are asked to sign up for at most two hours at a time. However, users may go beyond their scheduled time if no one else comes to use the machine. Users should sign up for at most 8 hours on any machine in any week.

3. LOCATION * The equipment is kept in Room 367, located outside the Staff Lounge. A key to Room 367 can be borrowed from assistant directors' offices or, after hours, from the Reserve Desk. The computer is kept on a portable table.

4. MASTER PROGRAMS * Copies of master program disks are located in Room 367 and should reside with the computer at all times.

5. DOCUMENTATION * One complete set of reference manuals will always reside with the computer. A second copy of some manuals will be kept in Room 367 and should be checked out using a sign-out card.

6. DISKS * Users should obtain 5-1/4 inch disks from their department heads, who in turn can order them as a supply item from Business Services.

Ad Hoc Committee for IBM Personal Computer and Xerox Memorywriter Use
10-1-82
rev 12-19-83

A LAND-GRANT UNIVERSITY

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

UNIVERSITY LIBRARIES OFFICE OF THE DIRECTOR (703) 961-5593

24 January 1984

TO: LAC

INFO: H.G. Bechanan
J. Eustis
M.L. Norstedt

FROM: Glenn R. Lowry

SUBJECT: PC/Terminal Interim Policy/Procedure Recommendations

As you are aware, representatives from your departments constituted an Ad-hoc Microcomputer Installation Planning Group during the fall 1983 quarter. This group was instrumental in addressing the role to be assumed by Library personnel with regard to the PC and terminal devices installed in Newman Library on 12 December 1983.

I am forwarding two documents which represent policy and procedure recommendations promulgated by the group. The first document, entitled "Policies Regarding Personal Computers and Terminals in Newman Library," addresses policy issues regarding closing time, security, copyright liability, noise, scheduling, and the roles of the Reference Departments and Systems Office. The second document is entitled "Reference Departments Procedures on Computer Maintenance" and addresses points of interaction between library staff and patrons.

You are asked to review these documents for consideration for adoption at the next LAC meeting. Both documents represent the thinking of your representatives to the Ad-hoc group and were seen in some areas as beginning measures. We ask for your recommendation at this time and anticipate review during the summer, after we have had a chance to learn more about the effects of these devices on library operations.

Thank you.

/krm

attachments

A LAND-GRANT UNIVERSITY

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

UNIVERSITY LIBRARIES OFFICE OF THE DIRECTOR (703) 961-5565

POLICIES REGARDING PERSONAL COMPUTERS AND TERMINALS IN NEWMAN LIBRARY

Closing time

1. The Computer Access Area is subject to the same hours of closing as the Listening/Reserve Room.

2. Software checked out at the Computer Access Area must be returned 15 minutes before closing.

3. Closing procedures include a check of all terminals and personal computers. Personal computers should be turned off; terminals should be logged off. The General Reference Department is responsible for terminals on the first floor. The User Services Department is responsible for all other public terminals not in the Computer Area.

Security

1. The library is responsible for the security of software and accompanying manuals housed in the Computer Access Area.

2. If damage occurs to hardware or software, the user is responsible for replacement or repair.

3. The library will act in a responsible, reasonable way to maintain the security of the hardware and peripheral devices.

Copyright liability

1. Signs reading "Copyright law forbids duplication of copyrighted software" are posted in and near the Computer Access Area.

2. Instructors supplying software must sign an agreement releasing the library from copyright liability.

3. A copyright warning appears on the software checkout forms.

Noise

1. The library cannot be responsible for noise emitted by machinery, although every effort will be made to partition off the Computer Access Area and buffer the sound inward.

2. Printers are allowed only in the Computer Access Area.

3. The playing of recreational games and the use of musical software is prohibited.

Scheduling

1. The Registrar's Office is responsible for scheduling the Computer Access Area for class use. The Systems Office is responsible for checking the schedule each day and posting the schedule.

2. The terminals used for word processing should be scheduled. Each department having terminals in its area will post a sign-up sheet for each terminals. The Systems Office is responsible for distributing the sign-up sheets, which should be returned to the Systems Office at the end of each week.

3. Users with academic assignments have priority for terminal use.

Role of the Reference Departments

1. Reference librarians must know how to turn the terminals and personal computers on and off and how to insert the diskettes.

2. Reference librarians are not responsible for instruction relating to programs and databases. Student users of the equipment should be referred to their instructors for guidance. It is recommended that Reference Departments limit the use of departmental phones in this regard.

3. The Listening/Reserve Room Librarian (Humanities Department) is responsible for the supervision of the Computer Access Area.

Role of the Systems Office

1. The Systems Office is responsible for liason with the Computing Center, placement of terminals and peripherals, and overall supervision of the equipment and its use.

2. Requests for equipment maintenance should be channeled through the Systems Office.

3. The Systems Office supplies the reference departments with schedule form for the terminals and monitors terminal use. The office is also responsible for checking and posting the classroom schedule.

4. The Systems Office will encourage user education among library faculty and staff and will advise internal users as to the availability of relevant short course offering and the like.

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REFERENCE DEPARTMENTS PROCEDURES ON COMPUTER MAINTENANCE

1. Reference Departments staff are responsible for showing patrons how to turn on the terminals and computers and to insert diskettes.

2. Reference departments staff will post sign up sheets to schedule use of terminals and computers. They will also return completed sign up sheets to the systems office.

3. Reference departments will report malfunctioning equipment to the systems office.

4. Reference departments will need to know how to configure the terminals and have access to the required configuration to emulate the IBM ("emulate the IBM" = let the machine pretend it is the IBM).

5. General reference staff will be responsible for turning off the terminals and computers on the first floor.

6. Patrons will be referred to their instructors to receive answers to questions concerning programming, etc.

7. If there is a problem or complaint with schedule, noise, or similar problems, the reference departments will intervene.

APPENDIX 4

THE UNIVERSITY OF TEXAS AT AUSTIN

JOB DESCRIPTION

Word Processor Operator (9058)

Salary range (1981-82) - $12,288 - $15,432

SUMMARY

Function... To provide highly skilled and specialized abilities in the preparation of printed materials for publication, operating word processing units and related specialized equipment.

Scope..... Responsible for programming and typesetting all materials for publication, including preparation of camera-ready copy for offset printing.

DUTIES

Typical.... Performs complex and difficult typing assignments on computer-based word processing equipment. Follows specifications and editorial standard marks to input data which results in document creation, text editing and automated text production. Initiates proper series of commands to create, edit, store, retrieve, format, print and accumulate a variety of documents, reports, brochures, and books electronically. Manipulates data previously recorded to incorporate extensive and complicated revisions. Performs typesetting tasks and prepares final copy. Proofreads copy. Does layout work to complete camera-ready job. Maintains log of assignments. Performs related duties as required.

SUPERVISION

Received... General supervision as to the details of the work. Completed work is reviewed by the department supervisor and/or staff member for whom the job is being prepared.

Given..... May supervise the work of clerical personnel assigned to composing operations.

EDUCATION

Required... Graduation from high school plus specialized courses in operating word processing equipment.

Preferred.. College-level courses in journalism and English.

EXPERIENCE

Required... Two to three years' experience in operating word processing equipment.

Preferred.. The above experience in preparing materials for publication.

EQUIPMENT

Required... Skill in operating word processing and various typesetting machines used in publishing.

Preferred.. Familiarity with photographic and duplicating equipment used by graphic arts or publishing department.

ACCURACY

Typing at 60 wpm. Accuracy in spelling, business math, English grammar.

WORKING CONDITIONS

Usual..... Excellent.

Special.... In some departments, sound distractions may occasionally exist.

The Robert W. Woodruff Library for Advanced Studies

EMORY UNIVERSITY
ATLANTA, GEORGIA 30322

Office of the Director

MEMORANDUM

TO: Word Processing Training Participants

FROM: Janet T. Paulk
Assistant to the Director of Libraries and
Coordinator of Staff Development

JPaulk

DATE: March 16, 1983

An eight session workshop has been planned to provide instructions for using the two new IBM word processors recently purchased by the General Libraries. You are one of a group of twelve (12) persons selected by Division Directors and Department Heads to attend this first series of training programs.

Ms. Patricia Vandervort, a librarian and systems analyst, will provide instructions for using Wordstar and Spellstar word processing software packages. Your supervisor will work with you to adjust your schedule, if need be, to enable you to participate in this on-the-job training.

Sessions will be held in Room G-14 on the ground floor of Woodruff Library and the schedule is listed below: (All sessions will be group lessons except for Lesson 3)

Lesson 1 - 10:30 a.m.-12 noon, Wednesday, March 30, 1983-(Overview)
Lesson 2 - 10:30 a.m.-12 noon, Thursday, March 31, 1983
Lesson 3 - April 1-April 6, 1983, an individual lesson for each participant will be scheduled
Lesson 4 - 10:30 a.m.-12 noon, Thursday, April 7, 1983
Lesson 5 - 10:30 a.m.-12 noon, Thursday, April 14, 1983
Lesson 6 - 10:30 a.m.-12 noon, Thursday, April 21, 1983
Lesson 7 - 10:30 a.m.-12 noon, Thursday, April 28, 1983
Lesson 8 - 10:30 a.m.-12 noon, Thursday, May 5, 1983

We are excited to be able to provide you with this skills building training. If you have any questions concerning the program or encounter any problems, please do not hesitate to talk with your supervisor, Division Director or me.

Mattie Anderson, Documents Dept.
Maria Arzu, Order Dept.
Elizabeth Henderson, Collection Development Dept.
Helen Kesler, OCLC Cataloging Dept.
Mary McAbee, Circulation Services Dept.
Charles Mingle, Science Dept.
Linda Nodine, Special Collections Dept
Raleigh Schwartz, Candler Library
Ed Shoemaker, General Reference Dept.
Garnys Spruill, Serials Control Dept.
Evelyn Tull, Serials Control Dept.
Anita Westlake, OCLC Cataloging Dept.

cc: Directors' Council
Department Heads
Unit Supervisors
Ken Kimbrough

JTP/abd

The Robert W Woodruff Library for Advanced Studies

EMORY UNIVERSITY
ATLANTA GEORGIA 30322

Office of the Director

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Maria Arzu, Order Dept.
Elizabeth Henderson, Coll. Mgment. Dept.
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Mary McAbee, Circulation Services Dept.
Charles Mingle, Science Dept.
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Raleigh Schwartz, Candler Library
Ed Shoemaker, General Reference Dept.
Garnys Spruill, Serials Control Dept.
Evelyn Tull, Serials Control Dept.
Anita Westlake, OCLC Cataloging Dept.

FROM: Janet T. Paulk
Assistant to the Director of Libraries and
Coordinator of Staff Development

JPaulk

DATE: May 13, 1983

SUBJECT: Word Processing Training Course

Congratulations on completing the eight-session word processing basic training program!

This will confirm the meeting scheduled for 11:00 a.m., Wednesday, May 18, 1983, in Room G-20, to go over the progress made towards making the system operational for your dapartments.

As discussed, because of the lack of a systems coordinator in the library at this point, there are many questions yet to be identified—much less answered. Therefore, at this point, I will work with you to problem solve and set up a workable organizational system for using the IBM word processing equipment.

Until we have worked out details of scheduling and operations, it was agreed that in order to maintain and increase your proficiency in the use of Word Star you would continue to use the word processor about the same amount of time each week that you were during the training program. It was further agreed that if you are working on a project you could continue that project. Those of you who have specific projects already identified by your supervisors with deadlines which would require typing if they cannot be input into the word processor should let me know. We will make decisions concerning those projects on an individual basis. Joyce Gilbert, Office Manager of the Director's Office, and the two word processor coordinators, Anita Westlake and Mary McAbee, will be working with me to establish procedures for implementing use of the Word Star software packages. Division Directors, of course, will be heavily involved in any decision making.

As requested, I am enclosing the Word Star reference cards, version 3.0. Evaluation forms to critique the training will be distributed shortly.

If questions arise, please contact the most appropriate person depending on the question (i.e., Mary McAbee, Anita Westlake, Joyce Gilbert, or myself).

WORD PROCESSING MANAGEMENT PROPOSAL
GENERAL LIBRARIES

JANUARY 17, 1984

During the past few months as we have become more familiar with the nuances of using word processors/personal computers, our original premise of needing a word processing coordinator whose responsibilities would cut across divisional lines has changed. With more experience and knowledge about this office equipment, it now appears that shortly we will have word processors in many areas of the library rather than concentrated in the administrative offices and technical services. Accordingly, each department head should have some rudimentary knowledge of how to use this equipment and each secretary in the department should be skilled in the details of using this equipment. It is proposed that once each department head and departmental secretary has received this initial training, that the training can be handled, for the most part, by each department themselves as new people are employed. Also self-instructional modules have been developed and will be refined for this purpose. Just as the use of selectric typewriters, OCLC terminals, calculators and other office equipment is taught to each new employee (be they student or permanent staff) so word processing would be taught to employees needing this skill. In the Administrative Offices at present staff and students are being taught to use the TRS-80 and the Digital VT100 using a small self-instructional manual developed by Patsy Klingler (and added to by others) along with one on one training as needed. This is working well. Just as different people have been assigned the responsibilies to maintain expendible supplies, schedule use of and report equipment malfunctions for the OCLC terminals so would these functions be assigned for word processing equipment shared by a number of departments/divisions. The training of a group of secretaries in the use of word processing proved valuable in getting the library started in using our new equipment, likewise it is proposed that department heads/division heads be provided similar training to get us to the point where our equipment may provide more of a support for each department and sound knowledgeable decisions may be made about appropriate uses of this equipment.

1. It is proposed that either a fulltime or half time existing employee in the General Libraryes be employed on a a temporary basis to give 16 department heads/division directors 4 hours of basic word processing (1 hour per week)

2. The cost to the library to provide this training would be as outlined below: (e.g. basic salary [redacted]

3. The person employed could be either a fulltime employee who would work overtime or a parttime employee who would work additional hours per week and we paid at a rate above regular base pay.

4. Training would be given during normal working hours and the trainer would give 4 or?r?rne hour private sessions each week to four individuals.

r5. The trainer's schedule would be as follows:

2/6/84 - 3/2/84
3/5/84 - 4/6/84 (includes spring break)
4/9/84 - 5/4/84
5/7/84 - 6/1/84

6. Department heads/division directors could sign up as time permits; however it hoped that each department head/division director will learn this skill during this period.

7. A committee should be appointed to keep library personnel informed of new word processing information available which will enhance their capabilities to perform their jobs. It is recommended this committee be composed of Paul Cousins, Irene Mallsion, Janet Paulk and Anita Westlake.

8. Persons to be offered the opportunity to learn basic word processing:

1. R. Nuse	2. B. Abernathy
3. F. Henderson	4. S. Enyeart
5. L. McBride	6. D. Vidor
7. I. Mallison	8. L. Matthews
9. P. Kline	10. D. Morgan
11. K. Wilson	12. B. Crosby
13. S. Cole	14. R. Golden
15. S. Sapp	16. J. Givens
17. L. Davis	18. H. Johnson

Janet T. Paulk, Library Personnel Officer

J. Paulk

The Robert W. Woodruff Library for Advanced Studies

EMORY UNIVERSITY
ATLANTA, GEORGIA 30322

Office of the Director

MEMORANDUM

TO: DEPARTMENT HEADS AND DIRECTORS

FROM: JANET T. PAULK

DATE: February 2, 1984

RE: Word Processing Training for Department Heads and Directors

Training a group of secretaries to use the IBM word processors last spring enabled all library departments to begin using our new IBM word processor without a long delay. Likewise it was proposed that the library provide department heads and directors with sufficient basic word processing training to enable them to use this equipment and make sound knowledgeable decisions concerning how its capabilities may best serve their needs.

In order that each of you may have "hands on" training with an instructor, arrangements have just been completed to provide you with four individual one hour word processing lessons this winter/spring. Each session will be held in Technical Services where the IBM computer and printer is set up (between Collection Management and Serials Control). Training sessions will be one hour per week (at the same time weekly) for four weeks and the first group of four can begin sometime next week. Practice time will also be made available.

Anita Westlake (OCLC Cataloging Dept.), word processing coordinator in Technical Services, will provide instructions for using WordStar and SpellStar word processing software packages on the IBM personal computer.

Enclosed is a layout of available time slots for each of the training periods (See Schedules A, B, C and D). For example, if you choose Schedule A, Thursdays, 3:00-4:00 pm, your lessons would be February 9, 16, 23 and March 1 at 3 pm (barring unforeseen library council meetings, etc.).

Please bring your calendar and see Anita Westlake today or Monday to sign up for a time during one of the four week periods which best suits your schedule. If you already know how to use WordStar and SpellStar on the IBM personal computer, please let her know that you do not need to take this course; otherwise, we hope you will take advantage of this opportunity to add to your skills, knowledge and capability to manage your department or division.

Enclosure

CC: Anita Westlake

SELECTED REFERENCES

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Dewey, Patrick R. "Searching for Software: A Checklist of Microcomputer Software Directories." Library Journal 109 (March 15, 1984) 544-46.

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Online Libraries and Microcomputers. Phoenix, Information Intelligence, Inc. Monthly.

Small Computers in Libraries. Tucson, Graduate Library School, University of Arizona. Monthly.

Tenopir, Carol. "Identification and Evaluation of Software for Microcomputer-Based In-House Databases." Information Technology and Libraries 3 (March 1984) 21-34

Walton, Robert A. Microcomputers: A Planning and Implementation Guide for Librarians and Information Professionals. Phoeniz, Ariz., Oryx Press, 1983.

Woods, Lawrence A., and N.F. Pope. The Librarian's Guide to Microcomputer Technology and Applications. White Plains, N.Y., Knowledge Industry for ASIS, 1983.

COLUMNS

"Mason on Micros." Library Journal.

"Micro Magic." Online.

"Software Showcase" American Libraries.